System-driven gaps in information transfer for residents of aged care: A mixed method document analysis

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Statement of ethical conduct

The research associated with this thesis abides by the international and Australian codes on human and animal experimentation, the guidelines by the Australian Government's Office of the Gene Technology Regulator and the rulings of the Safety, Ethics and Institutional Biosafety Committees of the University. Ethics approval was granted by the Tasmanian Human Research Ethics Committee on 23 December 2013, reference no. H0013669.

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Abstract

Due to our ageing population, emergency departments (ED) in acute care facilities are dealing with increased transfers of residents from Residential Aged Care Facilities (RACF). These patients are at risk of acts of provision of unwanted treatments, omission of care, and adverse outcomes including increased mortality directly associated with gaps in transfer information. For at least 30 years, research has attempted to address this frequency of information gaps, which in general are thought to be stemming from RACFs. Research to date has largely focused on identifying and quantifying gaps to highlight the magnitude of the problem, and on developing localised transitional minimum datasets. Further attempts have been made to define the appropriateness of transfer and the subsequent impacts of transfer on ED length of stay. As a result, numerous paper and electronic information transfer tools have been introduced. New transfer forms and formats have led to some success in improving the amount of documentation transferred with residents to ED. However, this has not been sustained over time, and there has been little agreement toward developing a uniform mandated transitional minimum dataset. Despite the focus on transfer documents and information gaps there is a dearth of research looking at clinician authorship or clinician documentation practices during transfer, and few studies include ambulance services and their role in information transfer. The aim of this study is to identify practice contributing to the stubbornness of information gaps in the transfer of aged residents from RACF to ED via ambulance. This study examined documents and clinician documentation practices as implemented across transfer from RACF via ambulance to emergency.

A pragmatic approach guided the research design. Retrospective document review was used to examine the connection between documents, document content, the sites of practice and the practices of clinicians undertaking transfer of RACF residents. This approach acknowledged documents as collectively social products that represent organisations and users, and therefore also organisational work and work-practice complexities. Electronically scanned documents used across transfer by RACFs, the ambulance service and emergency triage were accessed via the study hospital's digital medical record system. The digital medical record provided easy access to information from all three groups of interest. Collection of transfer documents and transfer narratives from the same sources and transfer episodes facilitated examination of the relationship of documents to documentation and vice versa, as well as of the trackability of episodic transfer information across organisations.

Samples were drawn from 89 transfers undertaken between 1 December 2013 and 31 January 2014. Eighty of these cases met the selection criteria. Data samples collected were: all transfer document types sent from RACFs, all electronic ambulance case records, and all ED triage documents, resulting in 240 cross-facility transfer episodes. From these, 199 verbatim free-text narratives authored by clinicians facilitating each transfer were collected. In addition, 48 yellow transfer envelopes used for transfer by RACFs (not available in the digital medical record) were also collected.

A mixed method convergent parallel study design was employed in which quantitative and qualitative data are collected in parallel, analysed separately and then brought together in discussion. Practice Theory was selected as the primary lens for qualitative analysis, applying the concepts of doings, sayings and teleoaffectivity with the concepts of zooming in and zooming out to the overall interconnected web of transfer. Transfer narratives were quantitatively examined for standardisation of salient information using a common handover mnemonic, SBAR (Situation, Background, Assessment, Recommendation or Request). Results identified the foci of information and the presence or absence of salient information in transfer narratives, enabling theorisation of how information is cued by the design of tools and situational context in each of the three groups of interest.

The findings showed that consistency, availability and predictability of information were negatively affected by a lack of standardisation of RACF transfer information, despite ambulance and ED triage documents being reasonably standardised. The different contextual perspectives of the three organisations gave rise to different information foci: RACF staff focused on access to resources; ambulance staff focused on identifying a primary physiological concern; and ED triage staff focused on aligning physiological issues with numerical scales of urgency.

This thesis makes a novel contribution to understanding why information gaps from RACF to ED persist. All of the transfer tools in use were found to be predominately designed as records of care/event, rather than as information sharing tools that accommodate complex information. The results also show that socio-contextual practices narrowly focus narratives on the activities of the author, or on the context of the situation, to the exclusion of other relevant information. Information intended to avert risk is reliant on experiential prediction and subsequent experiential interpretation of the narrative.

Transfers fitting the popular expectations of acute ED services are carried out with surprisingly little transfer information, often relying on implicit mutuality. However, resource-related transfers that have limited mutual consensus or underlying agreement pre-condition

extensive justifications from RACFs to legitimise transfer, because the usual accepted services of the ED are pre-emptively broadened or strained. The detail of the narrative has little bearing on the type, completeness or availability of additional documents sent by RACF in transfer. Because each of these practices (mutuality and extensive narration and argument) work (i.e. the goal of transfer is successfully enacted) there is little incentive for RACFs to standardise practice. Ambulance case narratives implied on-site verbal exchanges between RACFs and paramedics, and generated content capable of filling some information gaps. This finding substantiated the value of the ambulance document and narrative and suggests that it may be a starting point on which to base an interdisciplinary information bridging tool.

This study concludes that current transfer tools used by RACF, ambulance services and ED triage generate site-oriented information with little incentive for collaboration or social exchange. The results of this study have the potential to reduce information gaps common across transfer at the clinical, policy and system design levels. More importantly, these findings have the potential to improve continuity and safety for RACF residents transferred to ED.

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Abbreviations

ADHA	Australian Digital Health Authority
ACFI	Aged Care Funding Instrument
ATS	Australasian Triage Scale
DMR	Digital Medical Record
EMR	Electronic Medical Record
e-PCR	Electronic Patient Care Record
GP	General Practitioner
HSO	Health Service Organisation
NP	Nurse Practitioner
PT	Practice Theory
RACF	Residential Aged Care Facility
RHH	Royal Hobart Hospital
RN	Registered Nurse
SBAR	Situation, Background, Assessment, Recommendation/Request
VACIS	Victorian Ambulance Clinical Information System
WHO	World Health Organisation

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Chapter 1: Access to specialist services: Problems in transfer for aged care residents and health care clinicians

1.1 Introduction

Access to individual specialist services is one of the benefits of modern health care. The advantage of specialist care is expertise. Specialist expertise is, however, often only accessible in locations geographically separate from mainstream points of care and through separate organisations (Rechel et al. 2009). In the context of aged persons living in residential aged care facilities (RACF), referral or transfer in order to access specialist care is common. In particular, RACF residents are transferred via ambulance to emergency departments (ED) for urgent/emergent care or specialist consultation (Briggs et al. 2013). Accordingly, transfers require that health care information and knowledge passes between different clinicians, with differing skill-sets, different organisational boundaries, in different geographical locations (The Commonwealth Fund 2013). Following transfer, RACF residents have been at risk of acts or omissions in care, and of adverse outcomes, due to transfer information being marred by considerable variability, gaps and misunderstandings for over 25 years (Hjortdahl 1992; Masso et al. 2015).

A major ongoing concern is how the ever-increasing ageing population (WHO 2015) and, by association, the specialist clinicians to whom the responsibility of care falls, share transfer information. Current information sharing practices in the Australian health care system are inadequate for inter-facility coordination and continuity (Banfield et al. 2013). Continuity across non-affiliated health services largely depends on the patient's ability to participate in and share responsibility for communicating information (Haggerty et al. 2003; Reid, Haggerty & McKendry 2002). However, if we consider that in 2011–2012, 247,290 people in Australia lived in RACFs (AIHW 2011-2012a), and that up to 75 per cent were identified as having dementia and/or other ageing-related conditions affecting their ability to communicate (AIHW 2012a, p. 58), it follows that the capacity of RACF residents who are transferred to provide accurate and complete information for themselves is limited, and that, unsurprisingly, such residents are considered an unreliable source of information on which to base specialist care decisions (Arendts, Dickson, et al. 2010).

Some of the most common consequent adverse events are inappropriate or unwanted care (Coleman 2003), resulting in ailments such as delirium (Hwang & Morrison 2007), and adverse medication events (Schnitiker et al. 2011). To reduce the risk of these and other

problems, numerous information sharing/transfer tools have been developed and implemented over the last two decades (Griffiths et al. 2014; Hjortdahl 1992). Tools such as mnemonics and acronyms are intended to aid clinician recall when handing over information, and documents are specifically designed to ensure transfer of appropriate information in hard-copy (Haig, Sutton & Whittington 2006; Terrell et al. 2005). However, despite the implementation of these tools, information gaps have remained a stubborn feature of transfer documentation. Two information gaps that persist are lack of a reason for the transfer event and lack of baseline cognitive function (Morphet et al. 2014). Residents without a clear reason for transfer and lack of documented baseline cognitive function have been found to be more likely to have invasive testing, and x-ray and/or computed tomography scans, than residents transferred with this detailed information (Morphet et al. 2014). Waiting for results in ED also adds to the risk of an adverse event, unnecessarily consumes ED resources and contributes to an increased hospital inpatient length of stay (Griffiths et al. 2014).

Aim of the study

The aim of this study is to identify practice contributing to the persistence of information gaps in the transfer of aged residents from RACF to ED via ambulance. This research will identify contributors to the persistence of transfer information gaps through an examination of documents and documentation practices for residents transferred from RACF to ED via ambulance. Information gleaned from this study will aid the development of better documentation, information sharing, and transfer practices. The rising numbers of RACF residents transferred to ED annually will benefit from a more complete transfer of information made on their behalf (AIHW 2012a). Clinicians responsible for their transfer and ongoing care will benefit from increased and more timely access to information, aiding decision-making. The overall outcome will reduce the risks of adverse events associated with transfer across services (Gruneir, Silver & Rochon 2011; Schnitiker et al. 2011). A potential further outcome will be the easing of pressure on clinical and physical resources caused by extended stays in ED.

Key terms

The following terms, referring to organisations providing aged care services, are used frequently in the literature: Nursing Home, Residential Aged Care Facility, Extended Care, and Skilled Nursing Facility. The level of care delivery or service provided to the aged individuals residing in the aforementioned facilities is often distinguished according to the level of assistance, i.e. high care and low care. For readability and consistency, all

organisations providing care to the aged outside of their own homes will be referred to as residential aged care facilities (RACF) throughout this thesis, regardless of the level of care offered. In addition, terms describing service providers who work in emergency care, not inclusive of hospital emergency departments, are also used frequently, Including: Emergency Medical Technician, Emergency Medical Service, Ambulance Service, Ambulance Officer, Paramedic, Intensive Care Paramedic and Ambulance Nurse. Where not specifically identified as Paramedic or Intensive Care Paramedic, the terms ambulance service, and ambulance clinician/paramedic are used interchangeably to refer to persons or services fitting this role.

The word ‘triage’ has a French military origin, and refers to the process of sorting wounded soldiers into two groups: those for whom treatment would be attempted, and those with wounds so severe that successful treatment was either less likely or non-urgent (Robertson-Steel 2006). When applied to modern-day emergency nursing, triage is a term for clinical decision-making that categorises urgency on a numerical scale based on a timeframe. The outcome of triage determines the minimum timeframe that a patient can wait to receive medical assessment and treatment. Although different urgency timeframes exist, the term triage – referring to the process of categorisation – is internationally recognised.

Common terms describing information sharing and information transfer between clinicians and across clinical specialties and/or services are: handoff, handover, shift report, and sign-out. The degree of transfer of accountability and responsibility for patients these terms denote is variable, but for readability and ease of use, the terms ‘handover’ and ‘information transfer/transition’ are used interchangeably throughout this thesis.

The problems RACF residents and health care clinicians encounter when accessing specialist and geographically separate services, tools designed to address information transfer problems, and key terminology have been briefly introduced above, revealing risks faced by RACF residents transferred to ED, as well as the frustrations ED clinicians face when making decision for residents. The ease with which these problems have been identified justifies the aim of the study. The remainder of Chapter 1 identifies and introduces current information handover concerns, the definition of ‘transfer’ relevant to this study, accepted information transfer recommendations, and the potential offered by electronic records in information sharing. The risks faced by RACF residents who are transferred to ED environments are also explained in further detail. Residential Aged Care, ambulance services and ED triage are outlined from their inception, as are their esoteric objectives and function, and the fiscal motives underlying the creation of record of care. Following is a brief discussion of legal distinctions underpinning RACF ambulance service and ED triage as

Health Service Organisations (HSOs), after which a discussion of the collective co-dependence of services reveals the importance of accurate and comprehensive information transfer. Lastly, Chapter 1 briefly details the study's methodology and provides an outline of the thesis.

1.2 Inter-facility transfer and risk

This section describes concerns about adverse events associated with poor information transfer (otherwise termed 'handover'), the terms used to define transfer processes, and recommendations for improving information exchange across transfer. The challenges of defining minimum requisite handover information for inter-facility transfer are also raised, and adverse outcomes for transferred RACF residents are further detailed.

Shifts in responsibility and accountability for care

Moving the responsibility for health care from one clinician to another, to another can be referred to as a 'transition' (The Joint Commission 2012). Transfer of a patient or resident from one service provider to another requires clinical handover. Handover is considered to be a time when patient information is at risk of being lost (Cohen & Hilligoss 2009; WHO 2006b; Wong, Yee & Turner 2017). In 2006, the World Health Organisation (WHO) listed improving information sharing through handover as a priority challenge. This was done as part of its 'High 5s' initiative on patient safety. Australia, leading part of that challenge, released a formal *Clinical Handover Implementation Toolkit* in 2007. The intention of the toolkit is to facilitate audit of current handover practices, to identify areas for improvement, and to implement sustainable change (ACSQHC 2012a). Outcomes from using the audit tool, and other independent and international studies, led to calls for a level of standardisation in handover while retaining some flexibility to tailor information to the many unique work environments in health care (Turner, Wong & Yee 2009).

The definition of transfer informing the National Clinical Handover Initiative acknowledges the fragmentation of our health care services by being inclusive of inter-specialty, intra-site and inter-facility situations. Thus theirs is the definition of transfer used in this study:

> transfer of professional responsibility and accountability for some or all aspects of patient care for a patient, or group of patients, to another person or professional group on a temporary or permanent basis (ACSQHC 2012b, p. 5).

The specific inclusion of 'responsibility' and 'accountability' suggests that incorporation of information sharing activities should be undertaken by clinicians at the time of transfer to

ensure coordination and continuity of care (ACSQHC 2012b). The ACSQHC (2012b) offers further recommendations aimed at minimising the risk of omissions or inadequacy in information exchange. These recommendations state that when transferring a patient to another facility handover may be undertaken by clinicians:

- Using face to face delivery with a checklist
- In the presence of the patient (at bedside)
- Face to face verbal only
- Using a checklist
- Via the telephone, and
- With the aid of mobile electronic tools.

In addition, the use of a single detailed transfer letter or audio recording for handover is clearly discouraged (ACSQHC 2012b, p. 15).

While the above recommendations outline what occurs during a transfer and what media and locations are appropriate for the transfer of information, discrepancies as to minimum requisite handover/information exchange across different services remain. Health Service Organisations (HSOs) are required to have and adhere to a structured handover policy inclusive of any procedures or process to be undertaken at the point of transition in care. HSOs are also expected to use *tailorable* minimum datasets in an effort to standardise information. Overwhelmingly it is inpatient transitions, such as shift to shift handover within a ward, between wards, from ED to an admitting/inpatient team, and from one inpatient team to another, that provide reference points for these recommendations (ACSQHC 2012b). However, the level of compliance required of distinctly separate services (such as RACF, ambulance and ED triage) during transfer encounters to use agreed transitional minimum datasets is surprisingly unclear.

Follow-on effects of a lack of agreed transitional minimum dataset

Transfer from RACF to ED increases the risk of adverse events for residents, who are often unable to clearly advocate for themselves, or to articulate accurate information on their own behalf (Arendts, Dickson, et al. 2010). It is well known that information gaps and/or misunderstandings at the time of handover are widespread issues that place patients at risk of unnecessary acts or omissions of care (Cohen & Hilligoss 2009; WHO 2006b; Wong, Yee & Turner 2008). Moreover, information gaps contribute to staff frustrations and challenges in providing adequate care in a fast-paced, high-turnover environment ill-designed for geriatric

or extended care presentations (Briggs et al. 2013; Schnitiker et al. 2011; Taylor, Rush & Robinson 2015).

Lack of a standardised transitional minimum dataset potentially contributes to gaps in information that progress to adverse events. Many studies report consistently inadequate hard-copy information accompanying RACF residents to hospital (Cwinn et al. 2009; Hoare 2009; Nelson, Washton & Jeanmonod 2013; Pearson & Coburn 2013). One way that gaps in transfer information contribute to adverse events is through the time taken to chase up or undertake investigations to fill in missing information. For the RACF resident, delayed care, or management decisions made without adequate information, contribute to poorer outcomes. Further risks of poor outcomes encountered in ED are caused by over-investigation (Girio-Fragkoulakis et al. 2011), onset of delirium (Boockvar, Fridman & Marturano 2005), infection, and fall-related injury (McCabe & Kennelly 2015). The time it takes to chase up information contributes to potentially deleterious events, an overall increased length of stay (LOS) in ED, increased overall hospital LOS (Morphet et al. 2014), and increased risk of mortality (Spirivulis et al. 2006).

Electronic health records: A future solution?

Electronically recorded and shared clinical files have been suggested as a way to overcome information loss in RACF Transfers (Gaskin et al. 2012; Zhang, Yu & Shen 2012). Electronic data storage and cross-facility transfer and/or access has the potential to improve timely access and availability of information when and where it is needed, with the flow-on effect of improving patient outcomes (Australian Digital Health Agency n.d.-b). Increased access to patient information has the potential to reduce unnecessary repetitions of investigative tests, support decision-making in complex patients, limit clinician reliance on patient memory, lessen clinician frustration, and, potentially, to reduce the overall hospital LOS (Australian Commission on Safety and Quality in Health Care 2017).

Unsurprisingly, calls are mounting to improve electronic information sharing between RACFs and hospitals (Stoyles 2017). However, widespread implementation of either a national or state-based shared electronic health record (EHR) system is yet to be realised (Chang et al. 2009; O'Malley et al. 2010; Yu et al. 2013). Rollout of the national electronic My Health Record has, as of 22 July 2018, only recruited 187 RACFs from a potential 2,688, and a further 5,392 services providing aged care across Australia (Australian Digital Health Agency 2018; Australian Institute of Health and Welfare 2017; NSW Government 2015). Recruitment is expected to be slow. However, slow uptake may also be related to concerns regarding high start-up costs, differing government-provided financial incentives for information

technology (IT) infrastructure aligned to different services (GP, hospitals, RACFs, and allied health), concerns about initial and ongoing IT support, and lack of linkage between aged care referral documents and clinical software (Stoyles 2017).

A practical (clinician user-oriented) limitations is that service provider uploads (i.e. episode summaries from GPs or ED presentations) to individual My Health Records are, at present, time-consuming. Records are first created in the service provider's service-specific electronic system and then uploaded (if compatible) verbatim to the patient's My Health Record (Australian Digital Health Agency n.d.-a). This practice creates a dual documentation system in several already time-pressured work environments. In addition, each upload is a record of care specific to the uploading specialty, documented using specialty-specific contexts, inferences and terminology, including abbreviations. Therefore, interpretation within a limited context is necessarily required of future readers. This suggests that while basic information (e.g. pathology results, allergies, and current medications) will be clearly identifiable, complex information in a given context will, in many cases, continue to require the kind of clarity that comes from verbal discussion (Banfield et al. 2013).

1.3 Three services, three backgrounds, three systems

The following section briefly outlines the historical background and distinct roles of RACF, ambulance and ED triage, and demonstrates that each service has evolved to provide a variety of unique specialist functions. It also demonstrates that in order to function as part of a larger health care system, individual services must share resources and operate with a degree of co-dependency. In addition, dual purposes in clinical documentation, in terms of the integration of remittance data within document structure, is highlighted.

Residential aged care in Australia: Early evolution to today

In the mid-19th and early-to-mid-20th centuries, care for the elderly, sick and/or disabled was mainly undertaken by three groups: government's *laissez-faire* social welfare system (which was poorly orchestrated across the country, most notably in the non-convict South Eastern states of South Australia and Victoria), voluntary charities/not-for-profit organisations, primarily organised by the wives of leading colonists, who received government subsidies for their efforts on a dollar-for-dollar basis, and religious organisations which were partly funded by colonial governments (Hynd 2017).

On the premise of reducing government expenditure on social welfare, religious organisations duly received significant financial assistance. In part, this enabled a broad

range of Catholic, Protestant, and other services such as the St Vincent de Paul Society, The Salvation Army and Wesleyan Central Missions, to be implemented across the country. Some mutual connections between church agencies and government emerged throughout this process, but mixed interactions, particularly in relation to funding, along with an overall lack of formal government regulation continued. The end result was 'a complex, multi-layered economy of welfare, with diverse ideological underpinnings and motivations, creating multiple strata of diverse practices and structures of charity' (Hynd 2017, p. 8). Despite this seemingly ad hoc system of providing care, the government of the day did not want to commit to taking over the role of providing social welfare, and thus a Church-based welfare system continued until well after the Great Depression of the 1930s (Hynd 2017).

At broadly the same time, state-funded income support, which was first set up in New South Wales and Victoria in 1900, following Federation, began to provide an alternative to receiving charitable care from religious institutions. This alternative took the form of small, means-tested aged pensions. During and after the Great Depression, religious charities, like the government before them, began to change and re-mould some of their services to wage-based welfare. Targeted financial support from government continued, and religious organisations developed an increased presence in care for the frail aged (Hynd 2017).

Stricter involvement in and regulation of welfare services saw subsidisation of the construction of homes for the aged in the 1950s under the *Aged Persons Homes Act 1954*. This subsidy eased the burden of accommodation shortages by alleviating the building costs of hostel-type accommodation, though it was not applicable to aged care homes encompassing care of the sick elderly (Le Gruen 1993). In 1962, the Federal Government addressed this problem by introducing recurrent funding of nursing homes. The introduction of this benefit underpinned major changes for the aged requiring a higher level of care than was available in hostels. This led to a boom in the construction of homes and in bed availability for nursing-home residents. In the first five years following introduction of the subsidy there was a 20 per cent increase in new nursing homes built, and a 48 per cent increase (to 12,348) in new nursing home beds (Le Gruen 1993, p. 2).

In 1966, the Holt Government introduced payments to eligible organisations towards meeting the costs of residents requiring continuous care. However, nursing homes were reluctant to admit persons highly dependent on nursing care. In response, the Federal Government introduced an additional supplementary benefit of $3.00 per day for residents requiring 'intensive nursing care' (Le Gruen 1993, p. 3). This contributed to a further increase in nursing home construction. By 1972, 54 per cent of nursing homes were run as private enterprise, 27 per cent as voluntary not-for-profit organisations, and 19 per cent by

State Governments. Rather than a lack of available nursing home beds, the government of the day faced spiralling costs from the provision of subsidies totalling $17.5 million per year, and the proposition that at least 8,000 nursing home residents had been admitted unnecessarily (Le Gruen 1993, p. 4).

In the early 1970s, the McMahon Government amended the *National Health Act 1953* to address exponential growth and spending in the nursing home sector, including excessive fees being charged by private providers. After the amendment, admissions to nursing homes had to be endorsed (or rejected) by a Commonwealth Medical Officer, any built extension or new premises had to be approved by the Director-General of Social Security, and private nursing homes could not charge residents fees in excess of those determined by the Department of Social Security.[1] At this time, concerns were raised that nursing homes were retaining patients in higher levels of care than necessary in order to claim a larger subsidy (Le Gruen 1993, p. 6). The focus of subsidies shifted to facilitate moving persons unnecessarily residing in nursing home accommodation into hostels, thereby alleviating government expenditure in the sector. However, these aims were not achieved, and in 1974 the Whitlam Government found it necessary to add further stimulus to encourage uptake of hostel accommodation services (Le Gruen 1993, p. 6).

In the late 1970s and early 1980s, government initiatives continued to shift the balance of nursing home beds from the private to the voluntary sector. One initiative, 'deficit financing', enabled the voluntary sector to increase its operation of nursing home beds, and, subject to availability, to purchase private sector facilities. Another initiative, introduced in the *National Health Acts Amendment Act 1977* saw private health insurers obligated to contribute an equivalent benefit to the Commonwealth Nursing Home Subsidy to patients insured under their scheme. However, later review in 1981 found that the claiming process was cumbersome, and that nursing homes had tended to continue to claim benefits from the Department of Health, because of the ease and simplicity of the government process, rather than from individual residents' private insurance companies. Realising the ineffectiveness of the scheme, it was abolished in September of that year, and the Commonwealth resumed complete responsibility for the payment of nursing home benefits (Le Gruen 1993).

[1] Responsibility for nursing home funding moved from the Department of Health (McMahon Government 1970) to the Department of Social Security (Whitlam Government) in December 1972.

The Hawke Government of the 1980s introduced further reforms. In 1986, the Nursing Home Standards Working Party, amongst other things, developed nursing home staffing standards, and new regulations governing the payment of subsidies. From 1988, the Resident Classification Index introduced needs-based staffing and resident needs-determined subsidy. Under this system residents were grouped into categories attracting different levels of subsidy, which were reviewed on an annual basis. A categorisation of 1 indicated highest care need, while a categorisation of 5 indicated a high level of independence/no nursing care required (Le Gruen 1993). As nursing homes were paid by the government according to needs-and-means-testing assessments of individual residents (Cepar: ARC Centre of Excellence in Population Ageing Research 2014, p. 12) there was an expectation that nursing home documentation would verify the funding received per resident (Cepar: ARC Centre of Excellence in Population Ageing Research 2014; Hamilton & Menzes 2011). Criticisms of the Resident Classification Index centred on the tool's lack of responsiveness in cases of acute deterioration, which left residents and facilities disadvantaged until the following year's review, and concerns over the amount of documentation required to validate the tool (Le Gruen 1993).

The current incarnation of aged care services and subsidy in Australia continues a century of politically expedient reform. In 2008, the Aged Care Funding Instrument (ACFI) replaced the former Resident Classification Index as the care measurement tool (AIHW 2011). The ACFI has three domains that are used to determine the level of subsidy received. The first deals with 'Activities of Daily Living', which encompasses nutrition, mobility, hygiene and continence; the second deals with 'Behaviour', and covers cognitive skills, wandering, unusual verbal and/or difficult physical behaviour. The last is the 'Complex Care' supplement concerns medication and complex health-related procedures (DOHA 2013).

As before, nursing homes (now referred to as Residential Aged Care Facilities) are required to keep records which readily enable assessment of claims made against the ACFI. Structured checklists are considered acceptable minimum datasets for the ACFI as they enable ease of monitoring, and, due to their checklist structure, ease of appraisal (DOHA 2013, p. 3). It is unlikely that the complexities of care for RACF residents with multiple comorbidity can be adequately communicated in either checklist- or flowchart-type documents. However, ease of accurate appraisal is a documentation priority because 93 per cent of funding for Australian RACFs comes from the Commonwealth (Federal) Government, while individual users' (residents') contributions make up only the remaining seven per cent (Cepar: ARC Centre of Excellence in Population Ageing Research 2014, p. 15). Therefore, the financial viability of RACFs is largely dependent on clear links between

the three ACFI domains and finance. In addition, although the results of ACFI appraisal against RACF claims may generate funding upgrades, the opposite is also possible. Lack of, or unsubstantiated, links between task and finance may lead to finding downgrades. Thus, documentation and data logs, such as checklists generated by RACF staff, are of utmost importance to the financial viability of RACFs (Cepar: ARC Centre of Excellence in Population Ageing Research 2014, p. 15) and cement a strong relationship between clinical documentation and financial security. Of concern is that documentation designed to verify subsidy funding alters the focus of documentation away from patient care and towards funding (Pelletier et al. 2002).

Ambulances in Australia: The cost of calling for help

Commencing in the late 19th and early 20th centuries, Australian ambulance services provided first aid and where necessary transport to higher medical attention (Ambulance Service of New South Wales n.d.; Auditor General Western Australia 2013; SA Ambulance Service 2017; Victoria Museum n.d.). By the 1980s, most states (bar the Northern Territory and Western Australia) had moved from private to State Government-regulated ambulance services (Auditor General Western Australia 2013). In Western Australia, the Northern Territory and South Australia, the definition of 'ambulance' is oriented towards provision of transport. In the eastern states, including Tasmania, the definition of ambulance is oriented towards pre-hospital first aid or emergency care, with the related but secondary function of transport to ED (Eburn & Bendall 2010).

Ambulance services are required to generate a record of each call-out event, regardless of whether transport to an ED occurs (Ambulance Service of New South Wales 2009). Each call-out event is documented in a standardised, state-based patient health record, known as the PHR or, if electronic, the e-PHR (hereinafter referred to as the e-PCR, or electronic patient care record). Regardless of private or state-based regulation, the provision of transport in terms of kilometres, in conjunction with the highest skill-set of the ambulance crew is commonly used to determine costs, and thereby remuneration associated with ambulance call-out events. Documentation that captures the call-out event enables a clear, auditable standard of service provision.

Ambulance Tasmania utilises Victorian documentation software known as the Victorian Ambulance Clinical Information System (VACIS) to generate an e-PCR (Ambulance Victoria 2012). At its simplest, the e-PCR can be broken down into three components: a) the call-out event and descriptive record; b) the call-out event assessment and treatment record; and c) the call-out event billable information record. The first two components are patient focused,

and the last captures the call-out's service delivery statistics and billing information. Captured data include: skill-level of the most senior clinician, odometer readings taken at the start and end of the job, time of call-out, time of arrival, time of assessment, time of departure, time of arrival in ED, time to triage, and time to print-out of the e-PCR (Ambulance Victoria 2012).

Finance and remuneration information are documented separately from the call-out event and descriptive record, and from the call-out event assessment and treatment record. Ambulance services receive State Government funding, though, as above, some costs may be recuperated by billing users for service provision in terms of kilometres travelled over the course of the call-out event. Specifically, Tasmanian residents are not billed unless their call-out event meets particular criteria, such as those set out for work cover, or by the Motor Accidents Insurance Board or Department of Veterans Affairs (Tasmanian Government 2011). Non-Tasmanian residents without reciprocal arrangements are billed based on new call-out 'round trip' kilometres at a rate of 622.04 fee units for the first 15 kilometres or part thereof, and 5.07 fee units for each kilometre thereafter. Or, in the event of a routine 'round trip', road service, which attracts the lesser fees of 188.21 units for the first 15 kilometres or part thereof, and 4.66 fee units for every kilometre thereafter (Tasmanian Government 2011).

Finance and remuneration information is separate from the provision of tasks as it is linked to senior skill-set and distances travelled in terms of kilometres. Staffing of the ambulance for each 'round trip' attracts a separate unit fee depending on the skill-set of the attending clinician. For example, an ambulance staffed by an intensive care paramedic attracts a fee of 467.24 units for the first 15 kilometres or part thereof and includes a 137.13 unit fee for each hour or part thereof in excess of three hours, and attracts a 1.03 fee unit per kilometre for every kilometre in excess of 15 kilometres (Tasmanian Government 2011). Lesser unit fees, except for unit fees associated with distances after 15 kilometres, are applied to ambulance officers and volunteer attendants. To ensure appropriate billing, it is imperative that each format of the e-PCR records the unique login of the most senior attending clinician for the purpose of service audit and invoice.

Emergency triage: A timely endeavour

Triage, developed by the French around 1792, first emerged as a process to sort the afflicted in warfare according to medical urgency. Numerous hospital-based triage systems now exist with the aim of determining the timeframe and sequence of presenting patients for initial treatment (Robertson-Steel 2006). There are three phases of triage. The first two are

applied by the ambulance service in the pre-hospital setting (caller to ambulance dispatcher) and on-scene (clinician on site with patient) (Robertson-Steel 2006). The third phase, which uses different parameters from the ambulance service at the point of entry to ED, is of interest in this study.

In modern hospital systems emergency departments are frequently common entry points for patients. The triage process is the same for patients who self-present and for those who arrive by ambulance. Information provided by the ambulance crew or individual, in conjunction with the assessment of a senior nurse, informs the triage. The aim is to use this information to make an informed decision and allocate a numerical category of urgency, correlated to a specified time-frame. The time-frame indicates how long the patient may safely wait before requiring medical assessment/intervention (Department of Health and Ageing 2009). The triage nurse generally applies the most common triage scale used in Australian public hospitals, the Australasian Triage Scale (ATS, see Appendix 1). The ATS is a numerical scale of 1 through 5, where 1 is time critical and seen immediately and 5 may wait up to 2 hours prior to medical assessment (Department of Health and Ageing 2009). Despite requiring the clinical skills of a senior Registered Nurse (RN) trained in triage, data intended for billing is not entered by the triage nurse. Instead, equitable access to the emergency health service provided by public hospital EDs is ensured by excluding administrative and related concerns from the triage process (Department of Health and Ageing 2009, p. 4).

Wait times to be seen and assessed by medical staff in Australian public EDs are frequently longer than ATS guidelines (Australian Medical Association 2017). Public emergency departments on a national scale are pressured to improve on lengthy wait times for patients exceeding their triage categories (Silk 2016). Introduced in 2011, the National Australian Partnership Agreement boosted funding for emergency departments and implemented National Emergency Access Targets, which provided reward-based funding to EDs in an effort to improve their performance (Council of Australian Governments (COAG) 2011; Silk 2016). Emergency departments reporting a pre-determined per centage of patients seen within ATS timeframes, and whom reported a disposition plan, i.e. admission or discharge, within a four-hour timeframe, received financial rewards (Sullivan et al. 2016). Similar to triage manipulation strategies that have evolved from long waits and environmental constraints in the USA, this financial pressure generated and, in some cases, enforced the adoption of new strategies in order to cope with demand (Wolf et al. 2017). With the dissolution of the Australian National Partnership Agreement in 2014, and subsequent funding cuts, the National Emergency Access Targets are no longer linked directly to

individual ED funding (Staib et al. 2016; Sullivan et al. 2016). However, the four-hour rule is still considered the benchmark (Silk 2016; Street, Marriott & Livingston, P 2012; Sullivan et al. 2016). A basic schematic of triage as patients arrive to ED is shown in Figure 1.1, below.

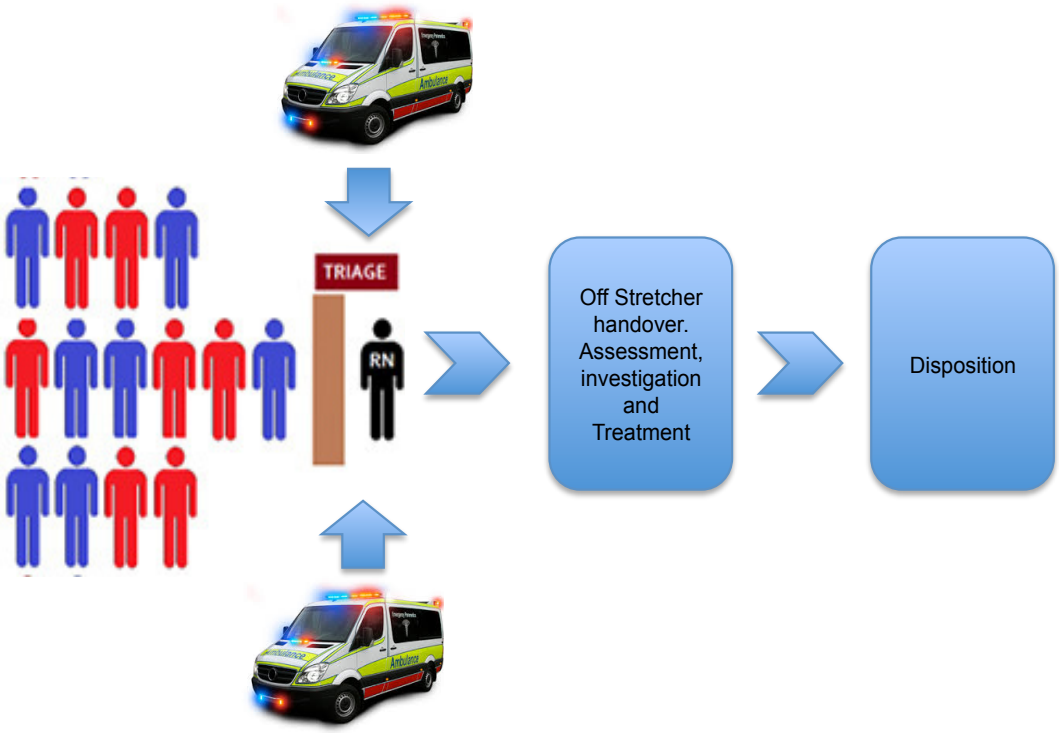

Figure 1.1: Triage of patients arriving to emergency
(Based on triage schematic www.etrihealth.com/history)

Legal differences, co-dependency and hierarchical challenges

Differing legal descriptors between RACF, ambulance and ED affect the roles and responsibilities of clinicians. In Australia, RACFs are legally categorised as social/accommodation services, not as Health Service Organisations (HSO) (National Health and Medical Research Council submission, 2007, cited in the Australian Government Law Reform Commission ALRC – 62 The Privacy Act). Yet RACFs employ nursing staff and actively participate in the ongoing care and transfer of residents to and from hospitals and clinics and other health services. While the difference in terminology is recognised, and some state-based submissions (NSW and Victoria) to update the *Privacy Act* to include RACFs as health services have been made, it is not yet clear if the recommendation has been processed (ALRC Recommendation 62-2 The Privacy Act).

Ambulance services are also not clearly defined as HSOs, yet interestingly they fall into the same categorisation as one afforded to businesses providing a health service where the attending clinician, not the ambulance vehicle, falls into the HSO category of service (ALRC-

62 The Privacy Act; Health Information Issues Paper 31). This presents an interesting way of categorising an HSO, as RACF social accommodation services also have health care clinicians on staff (i.e. Registered and Enrolled Nurses) yet are not subject to the same categorisation. Further, although considered outpatient departments with differing information requirements from inpatient units, EDs do fall into the HSO category.

As previously stated, specialisation increases the level of complexity in health care. Specialist service provision creates finite access to resources within a given organisation, such as to the work force, clinical skill-set, and equipment (Levine & White 1961). In addition, individual organisations develop documentation and reporting systems specific to their agenda and fiscal orientation (Prior 2003), yet a limitation in the availability of resources in one organisation implies that health care cannot be comprehensively provided unless resources and information are shared. To function as a cohesive and inclusive system, services must therefore agree on a level of co-dependency that facilitates shared resources, cross-communication referrals, patient transfer and continuity of care (Prior 2003; Saidel 1991).

In spite of their unavoidable co-dependencies, specialist service agendas are understood and appreciated in contrasting ways, influenced not least by differing fiscal orientations and hierarchical social structures (Vincent 2008). Hierarchical social structures in health care are most visible in the operation of prestige, influenced by a number of perspectives, such as contributions to research (Austin Health 2012), the skills of clinicians in different areas (O'Connell et al. 2013), the population served (Finn et al. 2006; Ingarfield et al. 2009), and funding models (Oliver-Baxter & Brown 2013). Organisational structure and social hierarchy are therefore collectively and recursively products of and contributors to practice.

Therefore, an exchange of information that successfully facilitates continuity for the patient (Van Houdt, Heyrman & De Lepeleire 2013) and adequately enables exchange of accountability for patient care requires collaboration on a number of organisational social and practice levels (Arendts, Dickson, et al. 2010). If, according to Levine and White (1961), researches are to understand information exchange interactions between different service domains, the function of an organisation (the organisational objectives and populations served), control of an organisation (external influences) and consensus on function, and allocatory control of an organisation (consensus which is socially accepted by other organisations participating in the exchange) must be acknowledged (Levine & White 1961). A major point of difference between this study of information transfer between RACF and ED and those before it is the examination of social practices found in documentation, and the specific inclusion of ambulance services in the research design.

Summary

Hospitals are only one component of a complex health care system (Rechel et al. 2009). Separating health care into primary, secondary and tertiary domains, and further narrowing those domains to encompass individualised specialist expertise/services, has had a global impact on the redistribution of some previously hospital-based services into alternative settings (Hudson, Weston & Farmer 2017; Saltman 2006). Far from its humble beginnings, aged care has developed as residential social accommodation in community settings, altogether separate from the acute care sector (Australian Law Reform Commission 2008; Department of Health 2016). In RACFs, residents have their general care needs and living requirements attended to on-site by Registered Nurses (RNs) with the support of care assistants, or vice versa, with additional input from visiting clinicians (i.e. General Practitioners, podiatrists, physiotherapists) (Cepar: ARC Centre of Excellence in Population Ageing Research 2014; RACGP National Taskforce 2006). However, specialist consultation can be challenging to organise on-site. For a multitude of reasons, off-site transport to alternative specialist centre is sometimes necessary (Grbich et al. 2005; Tham & Hardy 2013).

Information management and, by association, continuity of care across multiple service providers, is a significant coordination challenge. Not only in terms of where records are stored, but also in terms of maintaining currency, and facilitating continuity and responsibility for follow-up (Gadzhanova 2007). Further clouding the grey-area of information transfer responsibilities are confusing legal definitions of health services and social accommodation services (ALRC Recommendation 62-2 The Privacy Act).

In ordinary, everyday circumstances, individuals contribute to their own information management, information sharing and control. However, scope for self-efficacious care coordination is often hampered by cognitive or physical impairment. Therefore, up-to-date information, a clear understanding of the reason for transfer, and information to support continuity of care is particularly relevant in the event of residents being transferred alone to an ED. Yet for many the reality is that the combined differences between specialist services, remuneration activities, and documentation goals contribute to transfer information gaps, and exert a directly negative influence on the potential for adverse events, and of negative health outcomes for RACF residents.

1.4 Significance of the study

Predictions indicate that more and more elderly persons will be cared for in RACF-type accommodation in the future. The per centage of the population aged over 65 has increased, and there has been a corresponding decrease in the number of potential support persons to assist in their care (e.g. family members). In the 1980s, the potential support ratio per person over 65 years was 6.8. This figure is expected to drop to 2.7 by 2050 (United Nations 2015). As a result, there will be an increasing reliance on RACF organisations to care for the aged. At the end of June 2011, there were 169,001 *permanent* residents living in 185,482 of the available Residential Aged Care places in Australia. These residents were residing there for an average of 145.7 weeks. This is already a sharp rise from the 131.3 weeks reported in 1998/99 (AIHW 2012a, pp. 9,40), and confirms that not only are more persons living in RACFs, they are also living in RACFs for longer.

As with other members of the general population, RACF residents periodically receive treatment for illness and/or injury in an acute care setting. Many commence their acute journey after arriving in ED via ambulance unaccompanied by anyone who knows them well (Griffiths et al. 2014). Recent research has demonstrated that, over a two-year period, approximately 30 per cent of RACF residents spend time in acute care in the last month of life, and that 14 per cent die there (AIHW 2018). Absences from RACF, referred to euphemistically as ‘leave’, to receive acute care in hospital were provided to 165,032 permanent residents between July 2010 and June 2011 (AIHW 2012a, p. 38). However, this figure does not include the number of permanent residents transferred to hospital and returned to RACF on the same day. Therefore, the figure stated is an under-representation of the frequency of transfer. Accurate transfer numbers are worthy of attention. Frequencies in transfer from RACF will undoubtedly rise as the population continues to age. This suggests that more frail residents will be at risk of adverse events, and, as a consequence, also poorer health outcomes. A rise in the number of transfers to ED will add to workplace pressure through increased demands on resources, whether residents are returned to RACF on the same day as transfer or not.

Calls for standardisation in information transfer have resulted in checklist-type forms (Belfrage et al. 2009) and/or mnemonics and acronyms to help recall or document information (Riesenberg, Leitzsch & Little 2009). Some improvement using checklist transfer forms from RACF to ED has been achieved (Belfrage et al. 2009; Dalawari et al. 2011; Davis et al. 2005). However, these improvements could be attributed to a Hawthorne-like effect (Wickstrom & Bendix 2000), since although results were initially promising, they have not

been sustained (Hoare 2009). A recent review of the literature found that much of the research on mnemonics/acronyms focuses on intra-facility transfer (Hilligoss 2014) and paramedic handover in acute medical or trauma cases (Iedema et al. 2012; Loseby, Hudson & Lyon 2013). While other studies more broadly examine the theory of communicating for task integration (Gittell 2011), few studies focusing on inter-facility transfer from RACF to ED, inclusive of ambulance services, exist. This research on RACF to ED transfer, which specifically includes the ambulance service, will address some of the information gaps overlooked in previous studies.

In summary, numerous studies indicate that care is often marginalised for RACF residents transferred to an ED. Transfer communication is most often staged: verbal handover and transfer of RACF documents first occurs between RACF and ambulance clinicians, followed by a second verbal handover and transfer of the RACF and ambulance case report to emergency staff. Appropriate assessment, treatment, care planning and continuity in ED is reliant on accurate information. The majority of problems regarding information gaps are thought to stem from RACFs. The role of paramedics in transfer from RACF to ED has received little attention, and suggestions to improve triage processes for the aged in general are in their infancy. Inadequate transfer information contributes to adverse events that have the follow-on effect of a reduction in departmental flow and strain on ED system resources. Communication deficits need to be overcome to provide safe care and continuity for the ageing population, and to alleviate unnecessary resource utilisation in ED.

1.5 Research design

This research will explore transfer documentation[2] for RACF residents transferred to ED via ambulance. The aim of this study is to identify practices contributing to the durability of information gaps in the transfer of aged residents from RACF to ED via ambulance. While the main focus is transfer documents and documentation, the wider functional objectives of documents and the organisations of origin are included in this discussion. This research posed the following questions:

- What common information transfer tools are in use in Tasmania, and how (if at all) do transfer tools affect the information about residents transferred from RACF to ED via ambulance?

[2] For the purposes of this study, transfer documents/documentation also refers to the triage document used to receive all patients arriving to ED.

- What documentation practices are common to the transfer of residents from RACF to ED via ambulance?
- What socio-contextual practices are evident in the transfer documentation of residents transferred from RACF to ED via ambulance?

This research will aid understanding of why information transferred about residents from RACF to ED is consistently inadequate. The findings/results will inform the re-development of information transfer systems for the benefit of RACF residents and the health care clinicians responsible for their care.

Research Methodology

This study is necessarily pragmatic, and thus is not bound to a single unified paradigm. The approach taken has been determined by the best fit to answer the research questions with the resources available. A mixed method approach was used to explore organisations from the perspective of information transfer. Qualitative and quantitative methods align well with this study because neither is treated in isolation; the quantitative phase enables patterns and the extent of the problem to be revealed, while the qualitative phases enables the underlying practices that account for the sustained phenomena to be drawn out (McEvoy & Richards 2006). Previous studies on information transfer from RACF to ED have predominately centred on information content counts and on identification of information gaps (Cwinn et al. 2009; Nelson, Washton & Jeanmonod 2013). However, identification and calculation of the extent of perceived information gaps has had little enduring effect on improvements in RACF to ED information transfer (Gillespie et al. 2010; Hoare 2009). Further comprehension of the problem, which may lead to improved practice, is gained from a mixed method approach that draws strength from the interplay between quantitative and qualitative phenomena.

The transfer cases studied originated from 27 RACF sites, utilised one ambulance service, and arrived at one tertiary referral hospital emergency department. Case documents were collected for 89 RACF resident transfers. Eighty of these fitting the selection criterion were included in the study. Case documents comprising photocopies of individual documents sent with the resident by RACFs, transfer records created by the ambulance service, and triage documents created on arrival at the emergency department represented the three services and two information transition points. Individual RACF document sets ranged from one to 20 pages in length. Where a document set spanned more than one page (i.e. a medication chart) the item was counted only once (as one page). Ambulance document sets ranged between one and three pages in length. Emergency document sets were all one page long. The total number of individual pages comprising all document sets was not counted. In

addition, 48 officially recommended RACF-to-hospital transfer tools were collected separately, as these were found to be missing during the initial document review. After removal of dual copies, 38 of these were included in the study.

Quantitative analysis examined specific transfer documents' structure and design. Quantitative data analysis also looked for standardisation of salient information in the content of free-text transfer narratives using a common handover mnemonic. SBAR (Situation, Background, Assessment, Recommendation or Request) provided the deductive framework. Data clustering techniques, tabular and graphical display styles based on the material and non-material mnemonic tools were then applied. Results identified the foci of information and the presence or absence of salient information in transfer narratives. This enabled theorisation as to how the design of tools and situational context prompts information for each of the three groups of interest.

Qualitative research methods enabled socio-contextual exploration of practice through examination of free-text transfer narratives (Nicolini 2009; Prior 2003). From 80 transfer episodes between RACF and ED via ambulance, consisting of 240 transfer document cases (80 RACF, 80 ambulance and 80 ED triage), 199 complete free-text transfer narratives were collected. These were predominately authored by RACF nurses, ambulance paramedics and ED triage nurses. Narratives were coded using words connoting action and subjective references to action (Miles, Huberman & Saldana 2014; Prior 2003). Schatzki's (2001, 2005a, 2005b) practice theory and site ontology enabled examination of the social actions of the groups of interest enacting transfer. Switching theoretical lenses to alternative paradigms at different stages of the study enabled tracing of the complexities and a more accurate and complete analysis (McEvoy & Richards 2006; Nicolini 2009). Acknowledging that socio-contextual practices are never performed in isolation from wider socio-material phenomena, Nicolini's framework of zooming in and zooming out was used to draw the two paradigms together in discussion (Nicolini 2009).

1.6 Thesis structure

This thesis consists of seven chapters, culminating in new findings about RACF-to-ED transfer via ambulance. This chapter has provided background pertinent to information transfer issues, has established the significance of information transfer as relevant to vulnerable aged persons in RACFs, has presented readers with a broad description of three distinct services, has outlined the concept of system fragmentation in health care, and has provided a brief overview of the philosophical underpinnings of this study. The literature review in Chapter 2 assesses current research on RACF Transfer to ED. Attention is drawn

to an increased need for the provision of acute services in RACFs. Information gaps such as the lack of inclusion of ambulance services in RACF-to-ED transfer research, the design limitations of circulating transfer tools, and a focus on transfer information content analysis to the detriment of social research into transfer documentation practices are highlighted. The findings of the literature review verify the significance of this study and justify the research questions.

Chapter 3 outlines the pragmatic philosophical framing of this study, the utility of social theory to the mixed methodology, and the research design, including data collection and analysis. Chapters 4 and 5 present the results and findings of the study. Chapter 4 reports the results of quantitative data analyses on common material and non-material artefacts (tools) used in transfer, focusing on the significance of site-specific intentions behind structure, intended function and content in the context of a common handover mnemonic. Chapter 5 presents qualitative findings, focusing on links between practices and referential inference in the free-text narratives. Chapter 6 brings qualitative and quantitative data together in a discussion of the findings. This discussion synthesises positive and negative practices and theorises as to their contribution to the persistence of gaps in transfer information. Chapter 7 summarises the research and presents recommendations on how to positively address the durability of information gaps from a clinical and systems perspective.

Chapter 2: Literature review

2.1 Introduction

This chapter presents a review and summary of the relevant literature on transfer information sharing between RACFs, ambulance services and EDs. The literature has a historical pattern. Gaps in the provision of RACF Transfer information to hospitals have been a known problem in the literature for over 30 years. The inclusion of all articles in this expansive timeframe was beyond the scope of this review, but a general overview suggests that from the mid-1980s to 1990s, identification of inadequate and or inappropriate documentation from RACFs was a significant focus in the literature. Between the 1990s and into the 2000s, the literature connects RACF documentation standards to RACF funding classifications. From the late 1990s and more prominently into the 2000s, the focus shifts to development, implementation and use of information transfer tools.

More recently, researchers have investigated whether it is appropriate for RACF residents to attend emergency departments. While this review briefly discusses the appropriateness of transfer, it is not a primary concern. There have been numerous and ongoing attempts to reduce information gaps in the transfer and handover of information from one service to another spanning over three decades. The primary aim of this review is to focus on information transfer/sharing strategies used in the last 10 years, and to identify gaps and areas of interest within the research literature.

2.2 Search strategy

The following question guided this review: What is known about the transfer of information on RACF residents transferred to emergency departments via ambulance? Electronic databases were searched for published articles, and the broader Internet for grey-literature. The reference lists of articles fitting the search criteria were also scanned for inclusion. This contributed to a ‘snowball’ approach, used to identify further literature of relevance. Documentation standards and policies were also accessed.

The databases PubMed, CINAHL, Google, Google Scholar and the Cochrane database were searched. Articles were included if they met the overall search criteria (see below). The search was constrained to articles from the years 2000 to 2013 to capture recent developments and to English language materials or translations. To ensure relevance, repeat searches using the same search strategy were conducted again in December 2017. The final data range covered 17 years. Literature published before 2007 was useful for

background information, but to ensure currency, only articles published within the last 10 years were retained for this review. Articles selected remained in keeping with the inter-facility, cross-clinical specialty focus of the research.

Three separate searches, each building on the last, were conducted of each database.

The terms in search (1) were: ambulance, paramedic, EMT 'Emergency Medical Technician', 'nursing home', NH, 'residential aged care', 'aged care', 'handover', 'handoff', 'information transfer' and 'communication'.

Search (2) included terms listed for aged care homes, as well as: 'resident', 'patient'', 'geriatric', 'aged' and 'elder*', 'emergency department', 'ED', 'emergency medical service' and 'EMT'.

Search (3) included terms previously mentioned for ambulance staff, emergency departments and handover, combined with the more widely accepted term, 'triage'.

All searches utilised the Booleans AND or OR to link search descriptors.

The primary search yielded 528 articles. After abstracts were scanned for relevance, those not meeting the search criteria, and duplicates, were removed. Forty-six articles were included for full review. The later literature search repeated this process, while additionally including incidental article findings identified over the past four years. Further articles were found after scanning through reference lists, and a more general Google search.

The findings of this literature review draw attention to multi-structured applications and conventions of organisation-specific information collection and storage, and a lineal (sender-receiver) model of health information transfer. Potential for information exchange to be influenced by systems that contain rather than accommodate, inter alia, fluidity between social and acute care is highlighted, as well as the diversity of organisational and work-practice pressures impacting information system as a whole. Artefacts are identified as contributors to documentation and information transfer that both enable and constrain communication. There is a notable paucity of research inclusive of RACF, ambulance and ED transfer, and similarly scant research investigating documentation practices inclusive of all three services.

The literature from which these findings are drawn begins by examining matters of information transfer from RACF to hospital. As the primary focus of this review is communication, artefacts such as transfer documents, as well as non-material mnemonic

tools used across transfer are reviewed. Finally, before concluding the chapter, electronic data storage and information sharing is discussed.

2.3 Service delineation: A challenge to equitable access

Ideal health care systems should strive to provide consumers with equitable access to a comprehensive range of quality-driven and clinically effective services across the lifespan (Rechel et al. 2009). Fragmented access, driven by modern health system design, should be a catalyst for creating models of care, and models of communication, that reduce boundaries between geographically separate and non-affiliated services. This section identifies the importance of preserving EDs as primarily an acute service and the implied screening or exclusion from EDs of RACF population groups with non-urgent and/or end-of-life care concerns.

Potentially avoidable transfers

Codde et al. (2010) conducted a descriptive study on RACF-to-ED transfers to estimate the proportion of transfers that may have been avoidable with improved primary care in RACFs in Western Australia. Review of 1,350 presentations (4.6 per cent of all ED presentations in the 12-month data collection period) from RACF to ED found 603 were returned to RACF on the same day as presentation, 128 were admitted to the ED short stay unit, and 549 were admitted as inpatients. The remainder either died (12), were referred to another hospital (48), or left against medical advice (10). One hundred and sixty-one (31 per cent) of the total number of residents transferred were deemed to have been potentially avoidable transfers. Avoidable transfers were those classified as non-urgent symptom management, minor wound assessment and management, and minor injury – non-time critical radiology. The authors conclude that transfers may be avoided if access to primary care in RACF is increased (Codde et al. 2010).

In a similar study, Arendts et al. (2010) analysed case-mix and outcomes of patients transferred from RACF to ED in a public hospital in New South Wales, Australia. Using descriptive and comparative statistics to examine 4,680 transfers in a 12-month period, the authors found that most transfers were carried out for high acuity needs. Of the 4,680 cases, 2,693 resulted in admission by an inpatient unit, 79 were admitted but remained in the ED, 623 were admitted to the ED short stay unit, 63 died, and 1,203 were discharged from the ED. Further, 3,395 residents had 8,188 coded procedures or interventions and additional allied health or non-invasive interventions. The authors conclude that approximately half of the interventions analysed in this study were non-invasive, and therefore had potential to be

provided out of hospital in either RACFs or other outpatient services. While acknowledging the high-acuity of these residents, the authors suggest that models of care other than ED may be more efficient and/or acceptable to patients (Arendts, Dickson, et al. 2010).

Similar conclusions were made in studies undertaken in the United Kingdom. Briggs et al. (2013) conducted a prospective review resulting in analysis of 155 presentations to ED by 116 RACF residents over an 18-week period between November 2011 and March 2012, in Dublin, Ireland. The authors found that residents had a high premorbid level of functioning, and that many (32 of 116) had had recurrent ED visits in the prior six months. The primary reasons for transfer were falls-related. However, 85 (55 per cent) of presentations were deemed potentially preventable, and 36 (23 per cent) low acuity. To reduce the number of unnecessary transfers, authors called for more services, and/or changes to the existing structure of RACF services to better engage with gerontological expertise and primary care physicians to prevent transfer (Briggs et al. 2013). Although their study was conducted over a much shorter timeframe, Carter et al. (2009) drew comparable conclusions. Carter et al. (2009) undertook a prospective, descriptive study in the UK, aiming to describe the demographics of RACF–ED presentations and to estimate the appropriateness of alternative care. The authors reviewed 114 patients over a one-month period and found that between nine (8 per cent) and 46 (40 per cent) of RACF residents could have been managed outside the ED. Concluding that many multiple RACF-to-ED transfers were largely preventable, this small study called for more appropriate access to services in RACFs for residents (Carter, Skinner & Robinson 2009).

There are numerous calls (as above) for RACFs to incorporate a more acute clinical load, yet an increasing number of RACF residents are transferred to ED each year (AIHW 2013; Bachelard 2017). Arendts and Riebel et al. (2010) uncovered some key reasons why these transfers occur after analysing RACF focus group discussion data on factors that influenced transfer decision-making, as well as features that could reduce transfer. Transfer to ED was often the result of seeking and exhausting alternative treatment/assessment options. Common precipitators of transfer were inadequate staffing and/or the need for more qualified staff, access to equipment (e.g. oxygen), better access to GPs, more experience dealing with end-of-life care, and better communication between RACF and ED. However, and as reiterated by the authors, changes to staffing, education and access to care has implications for funding, Medicare, and GP fee-for services (Arendts, Reibel, et al. 2010). Therefore, regardless of how transfer is perceived or reported, it appears that the vast majority of RACF Transfers to ED will remain appropriate until recommended system changes are enacted that improve availability, access, and timely care in RACFs.

Uncertainty over which service should best deliver non-urgent health care for RACF residents suggests that the existence of equitable access to health care across the lifespan is, at least on paper, questionable. As some non-urgent forms of care currently appear to fall outside the responsibilities of both social accommodation services and ED, an obvious systemic flaw is implied. The studies above reflect a prominent gap in modern health care systems by highlighting limitations in RACFs to deliver increased clinical, as opposed to accommodation, demands (Arendts, Reibel, et al. 2010). The literature also implies that the dimension of care provided by an ED should primarily remain acute (Arendts, Dickson, et al. 2010; Briggs et al. 2013; Carter, Skinner & Robinson 2009; Codde et al. 2010).

Should the level of clinical services in RACFs be increased, changes to the ACFI remuneration model, a new model, or a system run in parallel to capture the increased clinical workload, skill and equipment supply would be required (Arendts, Reibel, et al. 2010). Research supporting alternatives to EDs for non-urgent care is likely to socially reinforce the perception that EDs are an acute-only service (Finn et al. 2006). The follow-on effect of this would likely be to discourage cross-service, cross-disciplinary networking and to reinforce service delivery through siloed organisations.

Socially acceptable transfers

The most common reasons for transferring RACF residents to EDs are related to infection, musculoskeletal, cardiac or associated circulatory, and neurological problems. Numerous authors identify respiratory origins (Arendts, Dickson, et al. 2010; Briggs et al. 2013; Carter, Skinner & Robinson 2009; Ingarfield et al. 2009; Kruger et al. 2011), followed by infections of the urinary tract as the commonest sources of infection (Briggs et al. 2013; Carter, Skinner & Robinson 2009; Kruger et al. 2011). A significant number of residents are also transferred with infection criteria fitting systemic inflammatory response syndrome (SIRS)[3] (Briggs et al. 2013; Kruger et al. 2011). Ingarfield et al. (2009) postulate that the incidence of respiratory infection is related to poor vaccination rates in RACFs, and/or that residents with cognitive impairment may not verbalise their symptoms to the same extent as non-RACF residents,

[3] Defined as critical illness leading to frank organ failure and death, SIRS is most commonly associated with inflammatory response to infection, manifested by two or more of the following: 'Temperature > 38^0C or < 36^0C, Heart rate > 90 beats per minute, Respiratory rate > 20 breaths per minute or $PaCo_2$ < 4.3 kPa, and a white blood cell count > 12 000 cells/mm^3, < 4000 cells/mm^3 or < 10 per cent immature band forms' (Clark, G.M 2003 'Part 10 – Infections and Immune Disorders: Severe Sepsis' in A Bersten, N Soni & T Oh, *Oh's Intensive Care manual*, Edition 5, pp. 637-648, Butterworth-Heinmann, Edinburgh).

thereby slowing recognition, and increasing the risk of hospitalisation at later stages, of illness (p. 316).

Twenty to 70 per cent of musculoskeletal injuries in RACF residents are hip or femur fractures (Hillen et al. 2011; Ingarfield et al. 2009; Kruger et al. 2011). The remainder of transfers for musculoskeletal injury are skin tears, soft tissue injuries and other identified fall concerns (Arendts, Dickson, et al. 2010; Briggs et al. 2013; Carter, Skinner & Robinson 2009). Reasons for falls in RACFs are numerous. Common reasons are: increasing age (≥ 80 years), polypharmacy (Bor et al. 2017), poor gait and coordination (Borowicz et al. 2016), anti-depressant use in persons with dementia (Wei et al. 2017), and environmental factors (Capezuti et al. 2008). Irrespective of the reasons for fall-related injury, recent evidence suggests that better consultation between paramedics called to attend falls in RACF, and with the resident's primary GP, has the potential to reduce transfer-to-hospital for fall-related concerns by up to 30 per cent (Williams et al. 2018).

RACF residents are also transferred to EDs for cardiac and other related circulatory conditions such as hypertension (Arendts, Dickson, et al. 2010; Hillen, Vitry & Caughey 2017; Ingarfield et al. 2009; Kruger et al. 2011), and neurological conditions inclusive of stroke, cognitive/behavioural concerns and delirium (Arendts, Dickson, et al. 2010; Briggs et al. 2013; Kruger et al. 2011). Dementia is the most common comorbidity in residents transferred to EDs (Hillen et al. 2011). While dementia is a syndrome of diseases which progressively affects cognitive function and undoubtedly increases the risk of confusion in new environments (AIHW 2012c), the risk of adverse events associated with delirium increased in residents transferred to EDs. Delirium is an acute state of confusion with multifactorial, but potentially reversible, causes, not limited to and inclusive of medications, fluid and electrolyte imbalances, infection, trauma to the head, poor cerebral oxygenation and constipation, depression, pain, and exposure to unfamiliar environments (RACGP National Taskforce 2006). One projective cohort study with 628 participants, identified delirium as an independent predictor of mortality at six-months post-ED visit with a Confidence Interval of 95 per cent (Han et al. 2010). Common reasons for transfer to the ED are inclusive of precipitators of delirium, which likely underscores the high incidence of diagnosis (35 per cent) in transferred residents identified by Briggs et al. (2013), and highlights the potential harm associated with delayed or transferred care. The common reasons for transfer to ED are shown in Table 2.1 below.

Table 2.1: Common reasons for transfer from RACF to ED

	Article by first author	**Briggs 2013** Prospective review of 155 presentations to ED by 116 RACF residents between November 2011–March 2012 in Dublin, Ireland	**Hillen 2011** Retrospective review of 3310 admissions for 2130 transfer from RACF to ED in South Australia from June 1999–June 2005	**Kruger 2011** Analyses of 1311 admissions from RACF to 2 public hospitals in Bergen, Norway from March 2006–March 2007	**Arendts 2010** Analyses of case mix & outcomes for 4680 transfers from RACF to ED over 12 months in New South Wales, Australia	**Carter 2009** (per cent values not provided). Prospective descriptive study of 114 RACF residents transferred to ED over 1 month. United Kingdom	**Ingarfield 2009** Retrospective cohort study examining 6167 RACF presentations to ED in Western Australia between January 2003 and December 2006
per cent Cognitive	Neuro/Stroke			5.91	9.4		
	Behaviour		3.47				
	Delirium	35					
per cent Respiratory	Urinary	8		17		+	
	Respiratory	29		51	13.7	+	11.5
per cent Cardiac/circulatory	Chronic Obstructive Pulmonary Disease		8.01	4.98			
	E.g. heart failure and associated complications		16.37	10.38	13.6		12.5
per cent Gastro-intestinal	E.g. digestive problems		11.45	11.22			7.4
per cent Endocrine	E.g. diabetes		4.71				
per cent Renal	Urinary tract & other nephrological			2.78			
per cent Musculoskeletal	Fracture		20.33	11.31		+	23.8
	Skin tear/soft tissue				14	+	
	Fall	17				+	
per cent Sepsis		36		16			
per cent Other	Infection			16			
	Not identified			18.22	10.9	+	12.9

Summary

While reasons for transfer are numerous, little variation is shown over the five-year period represented in Table 2.1. Most transfers appear to be for musculoskeletal problems, infective processes, cardiac, neurological, and gastrointestinal issues (Arendts, Dickson, et al. 2010; Briggs et al. 2013; Carter, Skinner & Robinson 2009; Hillen et al. 2011; Kruger et al. 2011). Despite several studies finding that many treatments provided for RACF residents in EDs are non-invasive, almost all demonstrated that residents are transferred to the ED in acute stages of illness or injury (Arendts, Dickson, et al. 2010; Briggs et al. 2013; Ingarfield et al. 2009; Kruger et al. 2011). The presence of highly acute clinical need suggests the practice of transferring residents from RACF to ED via ambulance is warranted. It also suggests that ED is a necessary avenue for access to treatment, given the focus of RACFs on social care rather than acute clinical management (AIHW 2011-2012b; DOHA 2013). As the majority of residents are reliant on RACF staff to clearly communicate the transfer event and relevant health history on their behalf, and as transfer to an ED is necessary but not without a multitude of risks, it follows that EDs require clear, up-to-date information in order to expedite timely, appropriate care.

2.4 Key information expectations: practical considerations

Emergency department clinicians need accurate and up-to-date information in order to make informed decisions with, and, when necessary, on behalf of, persons entering their care. Information gaps in transfer documentation provided for residents transferred to EDs from RACFs are a long-standing and well-documented problem (Cwinn et al. 2009; Hoare 2009; Pearson & Coburn 2013). RACF residents are complex patients. They have multiple comorbidities, multiple medications, are older than the general population, and are more likely than the general population to have cognitive impairment(s) (e.g. dementia or stroke) affecting their ability to accurately communicate health information for themselves (AIHW 2011). As above, residents are also transferred to EDs for a multitude of reasons. Therefore, access to relevant information is crucial in order to optimise appropriate care in EDs. This section highlights an apparent lack of agreement between RACFs and EDs on information considered essential for transfer.

Limited uniform consensus

Several studies reviewing the transfer documents of RACF residents received by EDs concur on three essential elements of transfer information. In no particular order, these are reason for transfer, past medical history and baseline cognitive function (Dalawari et al.

2011; Parashar, McLeod & Melady 2017; Platts-Mills et al. 2012). ED preferences, in addition to the three essential elements identified, vary considerably. Parashar et al. (2017) reviewed 200 medical records of RACF residents transferred over 12 months from January to December 2015 to one ED in Toronto, Ontario. After surveying ED clinicians, five key components of transfer information were ascertained: (1) reason for transfer; (2) past medical history; (3) cognitive status; (4) advance directives for level of care and resuscitation; and (5) emergency contact information (Parashar, McLeod & Melady 2017, p. 5). A similar study retrospectively reviewed transfer data collected between January and June 2009 received by Saint Louis University ED, Missouri, USA (Dalawari et al. 2011). Dalawari et al. (2011) reviewed 80 transfers (40 with transfer form, 40 without), randomly selected from 306 transfer episodes occurring within the data collection period. The authors used 16 items of essential information drawn from a previous study by Terrell and Miller (2006) to identify essential information in the transfer documents. It is worth noting that Terrell and Miller identified essential information criteria after conducting focus groups with ED clinicians (Terrell & Miller 2006). The 16 essential items are: (1) reason for transfer, (2) past medical history, (3) baseline mental and physical functioning, (4) current medications, (5) allergies, (6) advanced directives or code status, (7) facility name and phone, (8) nurse name and phone, (9) physician name and phone, (10) power of attorney/family name and phone, (11) date of birth, (12) recent vital signs, (13) capabilities of facility, (14) patient name, (15) recent lab work, and (16) wing or room of resident (Dalawari et al. 2011, p. 271).

From January to July 2009, Platt-Mills et al. (2012) undertook a cross-sectional observational study of transfer information from 12 RACFs, for 128 residents received by a single level 1 trauma centre ED. This study drew on three earlier studies, including Terrell and Miller's (2006), to develop a nine-item scale to look for essential information made available to EDs in transfer documents from RACFs. These items were: (1) reason for visit, (2) past medical history, (3) medications, (4) allergies, (5) baseline mental status, (6) baseline ambulatory status, (7) primary provider name, (8) health care power of attorney name, and (9) advance directives (Platts-Mills et al. 2012, p. 3). In agreement with Griffiths et al. (2014), these findings suggest limited consensus among ED clinicians on what constitutes essential transfer information for RACF residents.

Comparing information included in transfers from RACFs with the expectations of ED clinicians highlights discrepancies between information transferred and information desired (Parashar, McLeod & Melady 2017). In 2009, Cwinn et al. reported their retrospective review of RACF Transfer documents and documentation. This study analysed 437 transfer records for 380 residents transferred from 32 facilities to a single ED in Ontario, Canada from

January to June 2004 (Cwinn et al. 2009). Like Parashar et al. (2017), Cwinn et al. (2009) found that the reason for transfer was missing in almost a quarter of transfer to ED documents from RACFs. Adding further concern, Cwinn et al. (2009) demonstrated that around half of reason for transfer entries were missing important descriptive information.

Exploiting the limits of a compendious transfer entry

Supporting the finding that transfer entries lack descriptive detail by Cwinn et al. (2009), the study by Parashar et al. (2017, p. e3) found that 10 words or fewer were used to document the reason for transfer in 27.7 per cent of transfer cases, and that only 40 transfer entries (20 per cent) described the reason for transfer in 25 or more words. These findings imply that the practice of transferring a resident to ED is potentially disarticulated from the practice of communicating the reason for transfer. Lack of descriptive detail, combined with information gaps, impedes the provision of care for residents in the ED (Cwinn et al. 2009). Conversely, the contact information of the resident's primary care provider was included more frequently than all other information, despite ED clinicians in Parashar et al.'s study (2017) universally agreeing on its lack of importance. Common information gaps are detailed in Table 2.2, below.

Table 2.2: Common information gaps

Reason for transfer
Chief complaint
Advance Care Directive
Baseline cognitive function
Baseline mobility
Vital signs
Activities of daily living
Medication charts

Summary

The majority of RACF-to-ED transfers are appropriate, as residents tend to be transferred with exacerbations of chronic – often respiratory – conditions, acutely unwell, or with musculoskeletal injury (Arendts, Dickson, et al. 2010; Briggs et al. 2013; Carter, Skinner &

Robinson 2009; Codde et al. 2010). Although the studies reviewed show some variation, the data correlate with prior AIHW (2008-9) data analysed from 600,000 transfer events for 280,000 people linked to RACFs. These data showed that respiratory conditions (17 per cent), falls (10 per cent) and dementia (7 per cent) were the most common conditions for which permanent care residents were admitted to hospital (AIHW 2013, pp. 5, 31). More recent information from the US and Australia concludes that RACF residents have higher incidences of complex, chronic, multi-morbid conditions affecting their health (Hillen, Vitry & Caughey 2017; Moore et al. 2014). Therefore, the ongoing acuity of transfer events, as identified above and in the previous literature, is unsurprising.

Low acuity presentations are frequently identified treatable away from an ED. Acute but not resource-intensive presentations are similarly considered appropriate candidates for alternative treatment options. In order to reduce RACF-ED transfer, the same authors suggesting alternative treatment options also call for additional services in RACFs, such as increased access to GPs, as well as more equipment and gerontological care (Arendts, Dickson, et al. 2010; Briggs et al. 2013; Carter, Skinner & Robinson 2009; Codde et al. 2010). This study considers that, until recommended changes are actualised, and access to acute health services in RACFs is more equitable, transfers to EDs for all levels of acuity are likely to be appropriate.

In the studies above, lack of consensus on essential RACF-to-ED transfer information has been identified as an ongoing issue (Cwinn et al. 2009; Dalawari et al. 2011; Griffiths et al. 2014; Parashar, McLeod & Melady 2017; Platts-Mills et al. 2012). While most authors concur that the reason for transfer is of primary importance, there was a notable lack of agreement on the significance of cognitive, medication and administrative information. In order to address information disparities, and in response to calls from the WHO (2006b) to improve patient safety during clinical handover, many authors have called for standardisation across RACF-to-ED transfer.

2.5 RACF to ED transfer forms

Poor quality transfer information between RACFs and EDs, provided on behalf of residents, has been, and, despite some improvement, continues to be, considered deficient, with almost the same flow-on concerns reiterated in the current literature as have been identified over the past 25 to 30 years. From as long ago as the mid 1990's, calls were being made to improve RACF-to-ED transfer information with tools such as a one-page transfer form (Pearson & Coburn 2013). This section discusses transfer forms, their benefits, and problems associated with their uptake and use.

The Australian Commission on Safety and Quality in Health Care (ACSQHC) endorses the use of standardised information transfer forms such as checklists within and across facilities with an accompanying verbal handover (ACSQHC 2012a). Information in RACF Transfer forms is collated and completed by RACF nurses prior to transfer, and is then sent, along with the resident, to hospital in hard-copy (Pearson & Coburn 2013). Some transfer forms are structured to integrate a 'return to RACF' information checklist/summary that, when completed, is sent in hard-copy back to the RACF with the resident. While this is important to note, further investigation of return transfer communication is beyond the scope of this study. Use of RACF Transfer forms is schematically represented in Figure 2.1, below.

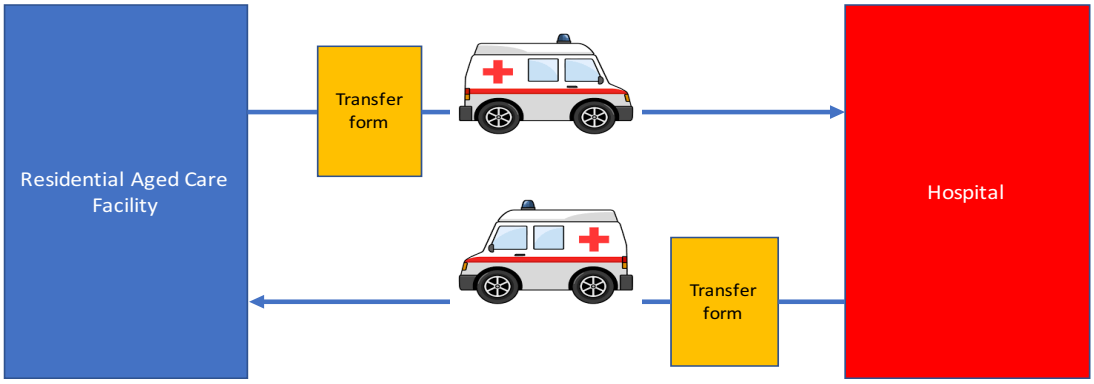

Figure 2.1: Transfer form use: Schematic representation

Transfer forms have led to some improvements in document transfer from RACF to ED. Between 2000 and 2007, several authors designed and trialled different versions of RACF-to-ED transfer forms. Most were reviewed shortly after their implementation, and, in agreement with later findings by Hoare (2009), all evidenced some degree of improvement in the amount of information transferred to the ED (Davis et al. 2005; Gaddis 2005; Terrell et al. 2005). The content of transfer forms was not standardised, but the 16 essential elements previously identified by Terrell and Miller (2006) did influence later trials. The essential

information was used to develop criteria to audit and/or refine information content in pre-existing and new transfer forms (Cwinn et al. 2009; Dalawari et al. 2011).

In this review, a total of 22 articles specific to RACF-to-ED transfer forms were found. Nine published in the last 10 years are included in this review: three trialled and implemented transfer forms and/or a minimum transitional dataset (Belfrage et al. 2009; Kelly et al. 2012; Zafirau et al. 2012); five discuss the effectiveness of new or amended transfer forms in retrospective document review (Carson et al. 2017; Cwinn et al. 2009; Dalawari et al. 2011; Hoare 2009; Zafirau et al. 2012); one describes RACF completion of a Continuity of Care form, completed for transfer and included by virtue of its similarity to transfer form criteria outlined in Pearson's 2013 policy brief (McCloskey 2011b); and one literature review of the types and content of transfer forms in use in one US state (Pearson & Coburn 2013). These articles are discussed further below, and are summarised in Table 2.3, below.

Table 2.3: Summary of articles on the use of transfer forms in RACF-to-ED transfer

Primary Author	Year	Country	Timeframe	Participants	Setting	Method	Results	Comments
Cwinn	2009	Canada	6 months: Jan–June 2004	384 patients, 457 transfers	One Emergency department, 32 referring RACFs	Retrospective Review	Standardised form used in 42.7 per cent of transfers. Gaps present in 74.9 per cent when transfer form used, 93 per cent when standardised form not used.	Minimal descriptive detail on presenting complaint
Belfrage	2009	Australia	18 weeks: January–May 2008	417 transfers. 355 with Yellow transfer envelope (YE)	26 referring RACF, 6 major Emergency departments	Prospective review, survey & interview. 19 RACF staff, 30 ED staff, 7 ambulance staff familiar with the form	YE used in most transfers. Easy to use. Felt transfer envelope improved handover	Discrepancy between recorded use of YE by RACF staff, ambulance and Emergency. Opportunistic interview with ambulance, only 7 from 11 familiar with the YE.
Pearson	2013	America	Multiple studies & timeframes	2013	Policy Brief	Literature review of one-way transfer from referring facility to Emergency. Follow up interviews with hospital and nursing facility administrators	Transfer forms improve communication across care settings. Transfer forms without additional information insufficient to solve all communication problems.	Transfer tools are specific to locale. Reviewers recommend cross facility collaboration to improve the transfer process.
Hoare	2009	Australia	2009	295 Hospital charts	Audit report on admissions and discharges from RACF to hospital.	Retrospective Review	Clinical information needs by Emergency departments is not always provided in the current systems. Standardised transfer forms are available, but are not in general use. Many sites use	Transfer forms reviewed pre and post implementation of the Yellow Envelope (Belfrage et al. 2009). The YE led to

					Review of two information transfer systems (1 x paper and 1 x electronic)		electronic discharge summaries. Content of discharge summaries needs review to ensure it contains essential information. General practitioners have little input into current transfer systems.	improvement in the amount of clinical information sent to ED. GP involvement in transfer remained low.
Dalawari	2011	America	Jan–June 2009	306 transfer record. 157 with transfer forms.	One University based Emergency department	Retrospective document review	Use of transfer forms increased information transmission. Essential transfer components in addition to reason for transfer and patient name were not consistently included.	Authors postulate the transfer of supplementary information (i.e. medication charts) with transfer forms are why completion of the forms are inconsistent
Kelly	2012	America	14 months	74 RACF residents transferred to Emergency department	One 140 bed RACF. One affiliated metropolitan Emergency department.	Retrospective document review before and after implementation of a transitional minimum dataset (TMDS)	Use of TMDS increased data transfer in 15 of 30 items. TMDS was found in 73 per cent of transfer records. Anecdotal satisfaction of the TMDS and transfer form.	
McCloskey	2011	Canada	6 months	24 RACF Transfers. Interviews: 5 RACF residents; 9 RACF practitioners; 6 Emergency personnel	One 198 bed RACF. One tertiary hospital Emergency department	Institutional ethnography - observation and interview	Completion of the Continuity of Care (CoC) form secondary to provision of care in RACF. Significant variation in currency and completeness of CoC forms. Emergency personnel described CoC form as unimportant, not providing necessary information. Reading of CoC form in ED infrequent. ED main focus on CoC form: medications and allergies. Ambulance obtained same information from the CoC form.	Completion of CoC form demanding of staff. The information does not necessarily translate into information or exchange or better care. Perception of information quality differed to quantity. Verbal communication to address known problems between

							Ambulance mediated information between RACF and Emergency.	RACF and Emergency poor. Ambulance staff observed but not formally interviewed.
Zafirau	2012	America	12 months. (6 months pre-intervention and 6 months post intervention)	130 resident transfers pre-intervention; 117 resident transfers post intervention	26 RACF, 1 acute care hospital.	Retrospective document review.	Transfer data collected pre- & post-intervention of new RACF tool, specifically inclusive of Advance Care Directives. Information transfer improved post intervention Length of stay slightly longer post intervention. Fifty per cent of RACF continued to use the new transfer form 6 months post introduction.	Admissions to palliative care increased post introduction of the transfer form. Information concordance improved post introduction of the transfer form.
Carson	2017	Canada	6 months to June 2016	23 doctors, 23 nurses, 250 transfers from RACF to hospital	10 RACF, 2 Emergency campuses	Retrospective document review	Doctors and nurses ranked 20 items from a systematic review of RACF Transfer data as: high, medium or low importance. After identifying a lack of collaborative communication, the existing transfer tool was redeveloped. Standardisation of transfer data improved post redevelopment of the transfer tool.	Redevelopment of transfer tool aided by root cause analysis, finding the Emergency department had not clearly communicated what information was required and that the current transfer form was not structured to include cognitive status. Post introduction, reason for transfer improved from 61 per cent to 84 per cent and baseline cognition from 4 per cent to 56 per cent.

Gaps in transfer information with and without the use of transfer forms have already been widely acknowledged (Arendts & Howard 2010; Cwinn et al. 2009; Griffiths et al. 2014), with common gaps listed in Table 2.2, above. Rather than focus only on gaps in transfer forms, this review examines what is known about the design and information structure of transfer forms, as well as the perceived benefits and limitations users have described.

Cross-facility transfer forms

Specific decision-makers for the layout and structure of transfer forms tend not to be identified in the literature. The people most often identified are those consulted if approached to confirm or rank essential information for audit purposes (Belfrage et al. 2009; Carson et al. 2017; Pearson & Coburn 2013). Concurring with an earlier study by Cwinn et al. (2009), Pearson et al.'s (2013) policy brief reports that the majority of transfer forms are designed by local hospital/medical administrators, with varying input from RACFs and/or their representatives. Few ambulance clinicians were identified in consultation processes. One study identified GPs as key stakeholders in the design of a transfer form, which was refined after obtaining feedback from EDs and from a small number of ambulance clinicians (Belfrage et al. 2009). Information concerning the level of input RACF staff have to the design process is lacking in the literature. Consequently, the involvement of RACF staff in the design process remains unclear.

Clinicians external to RACFs are significant contributors to the design of transfer forms. As a consistent supply of transfer forms on-site at an RACF is potentially a factor in their completion at the time a of a transfer event, it makes sense to identify how transfer forms are obtained. However, RACF access to transfer forms is a topic infrequently addressed in the literature. Two studies found that their respective transfer forms in hard-copy had to be purchased (Belfrage et al. 2009; Cwinn et al. 2009). The study by Belfrage et al. also found that an electronic template was available on the Internet, but was unclear if this format was also only available for a price (Belfrage et al. 2009). In an attempt to get further information, the author opportunistically asked a local provider, Tasmania Medicare Local, now Primary Health Tasmania (PHT), about access to transfer envelopes in southern Tasmania, and was duly advised by senior staff that PHT provided and distributed official transfer envelopes to RACFs around the state upon request.

Are transfer forms standardised?

Limited agreement on or universal standardisation of the content and format of transfer forms was found. Transfer forms were particular to care facilities or local geographical region

of origin (Belfrage et al. 2009; Carson et al. 2017; Pearson & Coburn 2013). As with earlier studies, the tendency was to report the number of participating RACFs, identify information gaps, highlight the level of completeness of transfer forms, and provide a document count. Less comment was offered on uniformity across the sample (Dalawari et al. 2011; Kelly et al. 2012). Exceptions to this included pre- and post-intervention studies introducing a new transfer form (Belfrage et al. 2009; Kelly et al. 2012), and/or their later review (Hoare 2009).

Pearson et al.'s (2013) policy brief identified 11 different transfer forms/checklists, standardised to particular regions. Ten, available to the present study's author in full, directly relate to RACF-to-ED transfer. Despite differences in layout and length (one to three pages), numerous content elements are repeated across the forms. Comparison of the 10 transfer forms available in full demonstrated an overlap of some content elements between five of the forms. Organised from most to least inclusions, from left to right, these elements, and those concurring in the transfer form described by Belfrage et al. (2009) and Zafiru et al. (2012) are shown in Table 2.4, below. McCloskey (2011b) suggests that a wide variation in format and content is the norm. These findings confirm that transfer forms are not standardised. Some transfer form designs are structured to incorporate extensive personal health information and others are not. In support of this view, Griffiths et al. (2014) concluded that a unified RACF-to-ED transfer dataset does not currently exist.

Table 2.4: Concurrence of transfer form content

Transfer fomr & study(s)	Name of resident	Reason for transfer	Signature and role of person completing form	Identification of sending facility	Code status or Advance Care Directive	Identification of receiving facility	Usual level of cognition	Allergies	Alerts	Vital signs at time of transfer	Medical history	Activities of daily living needs
5 transfer forms with information coherence identified by Pearson & Coburn 2013	*	*	*	*	*	*	*	*	*	*	*	*
Belfrage et al. 2009	*			*	*							
Zafiru: 2012	*	*	*	*	*		*	*		*	*	*

(* represents inclusion as content element of the transfer form)

How are transfer forms structured?

The order of information fields on transfer forms is highly variable. Transfer forms are generally formatted single-sided, with pre-headed 'fill-in-the-blanks' sections and

checkboxes on A4 paper, one to three pages in length (Pearson & Coburn 2013; Zafirau et al. 2012). One transfer form was printed in landscape on a C3-sized envelope (Belfrage et al. 2009). Several transfer documents used structured boxes to separate information, while others were structured as lists. Review of 11 transfer documents (as described above) identified four clear sections of information and another four sections in which the content and order of information were ill-defined. Sections 1 to 3 (of eight) made up approximately half of all transfer documents. A brief summation of the predominant categories in each is outlined in the list in the sub-section below.

The number of transfer forms matching the order of information in question is indicated in brackets to the right. Of note is that the reason for transfer, otherwise known as the chief complaint, did not stand out as a feature in the document designs, nor was it allocated a consistent amount of space. One transfer form allocated five lines to the reason for transfer, one did not include this section at all, one utilised a check-box, and two relegated reason for transfer information to the end of the form (Belfrage et al. 2009; Pearson & Coburn 2013; Zafirau et al. 2012).

Overview of transfer form information structure

Section One

- Residents name and demographic details (9)

Section Two

- RACF name and address details (8)

Section Three

- Reason for transfer/chief complaint (8)
  (available space to enter this information ranged from a check-box of pre-printed information that could be ticked, a small box suitable to enter 1-4 words, and 1 ½ to 5 lines (average 2 lines) across an A4 page)

Section Four

- Nurse contact information (1)
- Residents resuscitation code status (2)
- Assessment information (2)
- Background information (2)

- General practitioner contact details (2)
- Level of care provided at facility (1)

Section Five

- Assessment information (4)
- Isolation status (1)
- Alerts (3)
- Other decision-makers (Power of Attorney) (1)
- Other (1)
- Existing diagnoses (1)

Section Six

- Assessment information (1)
- Return transfer advice (1)
- Activities of Daily Living information (1)
- Recommendations (1)
- Isolation status (1)
- Medical background (1)
- Cognition (1)
- Devices in situ (e.g. indwelling catheter) (1)
- Reason for transfer (1)
- Advance Care Directive or similar (1)
- Medication review (1)

Section Seven

- Reason for transfer/Chief complaint (1)
- Signature of person completing form (1)
- RACF nurse contact information (1)
- Allergy (1)
- Resident belongings sent (1)
- Conditions of return transfer (1)
- Comments (1)
- Skin assessment/Elimination advice (1)

Section Eight

- Allergy (1)
- Signature of person completing form (2)
- Skin assessment (1)
- Additional information (1)
- Mobility aids required (1)
- Comments box (1)

The above list highlights the variable content and location of information on transfer forms. The generally limited provision of space for reason for transfer, combined with the difficulty of locating reason for transfer information where it does not stand out, suggests that existing transfer tools have room for improvement.

Reason for transfer is identified by ED clinicians as priority information (Dalawari et al. 2011; Parashar, McLeod & Melady 2017; Platts-Mills et al. 2012), yet review of information content in transfer forms received by EDs demonstrates that this information is frequently missing (Cwinn et al. 2009; Parashar, McLeod & Melady 2017). That consultation regarding the design of transfer forms should involve ED clinicians (Belfrage et al. 2009; Carson et al. 2017; Pearson & Coburn 2013) but not translate to provision of adequate space to document the reason for transfer in a prominent position on pre-printed transfer forms suggests that this information is either not equally weighted across sites or is documented differently elsewhere.

What are the benefits of RACF-to-ED transfer using transfer forms?

Transfer forms improve communication between RACFs and EDs. Concurring with studies prior to 2007, recent literature reports a reduction in information gaps when transfer forms are used (Belfrage et al. 2009; Cwinn et al. 2009; Dalawari et al. 2011; Hoare 2009; Kelly et al. 2012; Zafirau et al. 2012). In some cases, improvements in the accessibility of documents in ED of up to 20 per cent have been reported (Cwinn et al. 2009; Hoare 2009). In addition, detail describing the lead-up to and the transfer event itself is also noted to improve when transfer forms are used (Zafirau et al. 2012).

Timely access to transfer documents and information in ED may reduce the overall length of stay (LOS) residents in ED before disposition (i.e. decision to admit, refer or discharge the resident) (Pearson & Coburn 2013). Supporting Pearson et al. is an earlier study by Hoare (2009). Hoare suggests that timely access to documents and event information limits the

need for phone calls from ED to RACF to chase up information which would reduce the time taken to make treatment decisions (Hoare 2009). An added benefit of reduction in LOS would be a reduction in pressure on EDs, and, as an outcome of reduced LOS, minimised potential for adverse incidents for the resident (Knapman & Bonner 2010; Schnitiker et al. 2011). However, the assumption of positive effects of timely access to transfer documentation when transfer forms are used (Pearson & Coburn 2013; Hoare 2009) being correlated with a reduction in LOS may be premature, as two studies report no statistical difference to LOS when transfer forms were used: $p = .94$ (Dalawari et al. 2011), $p = .48$ (Zafirau et al. 2012).

Transfer is better expedited when a transfer form is pre-completed. In her qualitative study on resident transfer between RACF and ED undertaken in Canada, some RACF staff interviewed by McCloskey stated that information could be pre-prepared so that in the event of transfer it was 'ready to go' in advance (McCloskey 2011b, p. 720). Despite this risking information being outdated, having a pre-filled form ready at the time of transfer saved the RACF nurse time.

Verbal handover may also be improved when a transfer form is completed. Before introducing a transfer form, Belfrage et al. (2009, p. s117) found that study participants in RACFs and EDs felt that handover was 'unnecessary' when a resident was transferred to ED. After introduction, follow-up interviews with the participants (RACF, ambulance and ED clinicians) revealed that the transfer form had raised awareness and improved clinical handover across services. McCloskey, however (2011b), found that RACF-to-ambulance handovers were undertaken during tasks such as loading of the resident onto the ambulance gurney or into the ambulance itself. This exchange was primarily a handing over of the paperwork with limited verbal exchange. Thus, potential for verbal handover to improve when transfer forms are used needs further investigation.

One study suggests that transfer forms have reduced the rate of unnecessary hospital admissions and, by association, admission costs to hospitals (Pearson & Coburn 2013). However, Zafirau et al. found that hospital in-patient palliative care admission rates actually rose 6.2 per cent after introduction of a transfer form. It was unclear if the transfer form was the sole factor in the rise of admissions, however (Zafirau et al. 2012, pp. 291,294).

Summary

Cross-disciplinary consultation inclusive of ED clinicians is undertaken in the consultation phase of transfer form design. The extent to which RACF staff are involved in the process, and to which the consultation process affects the end product, is unclear (Belfrage et al. 2009; Pearson & Coburn 2013). ED clinicians clearly define reason for transfer as important information (Dalawari et al. 2011; Parashar, McLeod & Melady 2017; Platts-Mills et al. 2012), but the affording of little space to reason for transfer on transfer forms suggests this information is not equally weighted by form designers. Limiting space for reason for transfer and/or failing to make this important information stand out restricts the level of detail that can be comfortably entered and contributes to ED frustrations when this information is excessively brief or missing (Cwinn et al. 2009; Parashar, McLeod & Melady 2017).

Reason for transfer information may be documented elsewhere. One transfer form did not include reason for transfer in the form design at all, while another provided a selection of reasons for transfer which could be marked by ticking a box (Belfrage et al. 2009; Pearson & Coburn 2013). Previous studies have highlighted either lack of inclusion of reason for transfer information (see Table 2.2) and a limited number of words used to detail transfer information (Parashar, McLeod & Melady 2017). In addition, Parashar et al. (2017) suggests that RACF staff have limited experience with acute conditions, may be unfamiliar with the type of information useful to receiving clinicians, and therefore may not know what to document. At the time of this review, the author is unaware of any studies examining the location, structure, or referral practices in RACF Transfer information.

There is general consensus that transfer forms improve communication of the transfer event, as does the inclusion of associated transfer documents (Belfrage et al. 2009; Cwinn et al. 2009; Dalawari et al. 2011; Hoare 2009; Kelly et al. 2012; Zafirau et al. 2012). However, lack of a universally agreed standard for RACF-to-ED transfer information (Griffiths et al. 2014) may reduce the amount and type of information included in transfer. This review found that transfer forms are likely to be standardised within local areas (Belfrage et al. 2009; Cwinn et al. 2009; Pearson & Coburn 2013), and that, outside of local contexts, transfer forms are distinctly different in terms of design and content (see list above). The use of transfer forms that are highly variable may demonstrate differences in resources and levels of care in RACFs. This variability may also contribute to a lack of confidence in transfer information received by EDs that receive residents from multiple RACFs because of uncertainty regarding the type and volume or location of information received in any given RACF Transfer. Lack of confidence in RACF Transfer information may also be attributable to

information being filled out in anticipation of a future transfer event, which is then at risk of being incorrect and out of date (McCloskey 2011b).

Transfer forms in practice

Despite improvements when transfer forms are used, information gaps still persist (Cwinn et al. 2009; Dalawari et al. 2011; Hoare 2009; Kelly et al. 2012; Zafirau et al. 2012). Some of the most commonly cited missing pieces of information are clinical reason for transfer, baseline cognitive status, baseline communication capability, medication profiles and Advance Directives, (Cwinn et al. 2009; Hoare 2009; Zafirau et al. 2012), behaviours and continence information (Hoare 2009). In a follow-up study of the transfer form introduced by Belfrage et al. (2009) three months after it was first implemented, Hoare et al. (2009) found that information gaps remained in 74.9 per cent of transfers. Kelly et al. (2012) similarly report an improvement in only half of the 30 items included in the Transitional Minimum Dataset (TMDS) on the transfer form.

Information gaps also include a lack of descriptive detail of events leading up to and including the transfer. Cwinn et al. (2009, p. 468) report that descriptions of the transfer event are missing in 49.3 per cent of cases when transfer forms are used. And, while there are reports of improvement in the amount of information transferred (Belfrage et al. 2009; Kelly et al. 2012), Zafirau et al. found that information was missing in 16.3 per cent of the transfer cases studied (2012, p. 293).

Transfer forms appear to have had limited sustained use after good initial uptake at the time of introduction. Two studies examined user satisfaction with transfer forms at the time implementation (Belfrage et al. 2009; Zafirau et al. 2012). In one study, the use of standardised transfer forms had been made mandatory (Dalawari et al. 2011). However, sustained uptake after the initial introduction was poor. Later review, inclusive of the RACF site where use was mandatory, found that transfer forms used in 50 per cent or fewer of RACF to ED transfer cases (Cwinn et al. 2009; Dalawari et al. 2011; Zafirau et al. 2012). One study reported an exceptional continued use post-introduction of 73 per cent (Kelly et al. 2012).

One reason for poor continued use post-implementation may be that transfer forms are time-consuming to complete. Participants interviewed by McCloskey indicated that completion of transfer forms competed with provision of nursing care. Nurses had to access records, search for information, and print photocopies in locations away from the resident requiring transfer. This led to the forms being completed pre-emptively with the risk of information

being out of date at the time of an actual transfer event (McCloskey 2011b). Transfer forms potentially lack legitimacy in the ED because they are often incomplete and 'lack necessary information' (McCloskey 2011b, p. 720) and infrequently include a GP-authored letter of transfer (Hoare 2009).

Summary

A reduction of information gaps in materials received by EDs has been somewhat achieved with the use of transfer forms. However, these improvements do not appear to be sustained over time, and information gaps continue to occur (Griffiths et al. 2014; Hoare 2009). The design of transfer forms is undertaken in consultation with information receivers (Belfrage et al. 2009; Carson et al. 2017; Dalawari et al. 2011), but the effect of information weighting drawn from the consultation process on information lay-out on transfer forms is unclear. Transfer forms may increase the volume of transfer paperwork sent, though the content of information may be perceived to lack applicability in the ED setting if it is too complex, hard to locate, or not immediately relevant to the reason for transfer (McCloskey 2011b).

The risk of a lack of confidence in transferred information among receiving clinicians is that information is less likely to be referred to, read and applied. This suggests that there is a disconnect between how the final artefact is structured to transfer (send) information, and how it fits with information receiving practices (Pentland & Feldman 2008). Whom the built design and structure of transfer form layout rests with and how is unclear.

In much the same way as a standard operating procedure guides other practices, the intent of transfer forms is to provide a structured list of information that should be adhered to in the event of RACF Transfer to the ED to facilitate consistency (D'Adderio 2010). In practice, the completion of transfer forms appears to be a malleable process, with choices made by RACF nurses, who manage how the transfer form is integrated into the context of the transfer event. Transfer forms accompany residents transferred from RACFs to EDs (Belfrage et al. 2009; Carson et al. 2017; Dalawari et al. 2011; Kelly et al. 2012; Pearson & Coburn 2013; Zafirau et al. 2012). Despite their preferred, and sometimes mandatory, use to deliver a standardised comprehensive summary of transfer of care (Dalawari et al. 2011; Pearson & Coburn 2013), transfer forms are filled out and sent in varying stages of completeness (McCloskey 2011b). That transfer forms are sent with residents without necessarily being completed suggests that transfer forms are used to symbolise physical transfer rather than to actually transfer information (Pentland & Feldman 2008).

2.6 Verbal information exchange

Oral communication of clinical information is frequently cited as the most prevalent form of handover communication in RACF and acute inpatient settings (Daskein, Moyle & Creedy 2009; Ehrenberg & Ehnfors 2001; Hilligoss 2014; Jefferies, Johnson & Nicholls 2012; Jensen, Lippert & Ostergaard 2013). Communication between health care clinicians at its simplest occurs in two media: verbally, as in oral handover, and in writing, meaning the documentation entered into hard-copy or electronic patient notes (Jefferies, Johnson & Nicholls 2012). Though always subject to a reader's interpretation, written information remains constant across time-and-space (Giddens 1984). Written details are a permanently accessible resource in patients' health records, easily referenced in future. Verbal information is transitory, localised, and heavily context-dependent. Undue reliance on verbal information increases the risk of its omission or modification, placing patients at risk of acts or omissions in care (Jefferies, Johnson & Nicholls 2012).

Unsurprisingly, handover of patient information at different points in the patient's journey – i.e. from one clinician to another, from shift-to-shift, between wards, specialties, and/or across services – is recognised nationally and internationally as a high-risk process (Riesenberg, Leitzsch & Little 2009; The Joint Commission 2012; WHO 2006b; WHO Collaborating Centre for Patient Safety Solutions 2007; Wong, Yee & Turner 2008). Suggestions to improve transfer and communication of information at the time of handover tend to focus on standardisation of verbal and written content (Riesenberg, Leitzsch & Little 2009; Wong, Yee & Turner 2008). It is thought that a standardised structure may improve comprehensiveness and accuracy of both written and verbal documentation, and therefore information sharing/communication overall (ACSQHC 2012b; Bonacum 2008). This section focuses on non-material tools used to structure verbal and written handover content.

Mnemonic tools

Mnemonics and acronyms are a prevalent method of content standardisation in health care.[4] They are tailored to enable their applicability across multiple clinical settings (Manser 2013).

[4] Mnemonic: 'a system such as a pattern of letters, ideas, or associations which assists in remembering something'. Acronym: 'an abbreviation formed from the initial letters of other words and pronounced as a word itself' (English Oxford *living* Dictionary, OXFORD University Press, Accessed January 6th, 2016, from, en.oxforddictionaries.com).

This section reviews the development of mnemonics and acronyms (hereafter ‘mnemonics’) and mnemonics in common use, the use of mnemonics in verbal handover and documentation, and the capacity of mnemonics to be transferrable across settings. The benefits and barriers of using mnemonics are also discussed.

The development of mnemonics and mnemonics in common use

Military contexts have given rise to many handover mnemonics in health care. Credited to Tim Hodgetts, the mnemonic ‘MIST’ is integrated into numerous pre-hospital settings (Talbot & Bleetman 2007). Along with multiple academic and military awards, Professor and Brigadier Tim Hodgetts is an Emergency Medicine Specialist and former Defence Professor of Emergency Medicine in the UK (Royal Centre for Defence Medicine 2018). The mnemonic ‘SBAR’, also integrated into multiple handover mnemonics, is credited to American Kaiser Permanente employee Doug Bonocum (Stewart & Hand 2017). In an interview, Bonocum explained how he drew on his previous US Navy submariner experience to develop SBAR after gaining employment in the health care information sector in 2002 (Bonacum 2008). Since the WHO identified handover as a priority area in 2006, many hospitals, and hospital and health care working groups (comprised of, for example, doctors, nurses, GPs and allied health staff) have drawn on MIST and SBAR to manage safe handovers and/or to develop new mnemonics (Blom et al. 2015; Riesenberg, Leitzsch & Little 2009; Yee, Wong & Turner 2009). Table 2.5: Common mnemonics in health care, below, lists some of the mnemonics commonly found in health care settings.

Table 2.5: Common mnemonics in health care

Mnemonic	Definition	Suited to	Primary author
SBAR	S – Situation, B – Background, A – Assessment, R – Recommendation	Initially for clinical areas, now widely accepted and used in varied fields	Bonacum 2008
ASHICE	A – Age, S – Sex, H – History, I – Injuries, C – Condition, E – Expected time of arrival	Ambulance, Emergency Department	Loseby 2013
DeMIST	De – Demographics, M – Mechanism, I – Injuries sustained, S – Signs and symptoms, T – Treatment so far	Ambulance, Emergency Department	Riesenberg 2009
MIST	M – Mechanism, I – Injuries, S – Signs, T – Treatment	Ambulance, Emergency Department	Riesenberg 2009
I – SBAR	I – Identify, S – Situation, B – Background, A – Assessment, R – Recommendation	Nurses, Doctors, Transporters	Riesenberg 2009
SBARR	S – Situation, B – Background, A – Assessment, R – Response or readback	Nurses, Doctors	Riesenberg 2009
HANDOFFS	H – Hospital location (room/wing), A – Allergies, adverse reactions, N – Name (age, gender), D – Do not attempt resuscitation status, diet, deep vein thrombosis prophylaxis, O – Ongoing medical/surgical problems, F – Facts about this hospitalisation, F – Follow-up on...	Doctors	Riesenberg 2009
SOAP	S – Subjective information, O – Objective information related to the probem, A – Assessment of the patient's condition, P – Plan of what has to be done or should be done for/with the patient	Ambulance, Emergency Department, Neuroscience nurses	Riesenberg 2009
STICC	S – Situation, T Task, I – Intent, C – Concern, C – Callibrate	Nurses, Doctors, Residents	Riesenberg 2009
5 P's	P – Patient identify, P – Plan of care, P – Purpose of plan of care, P – Problems (i.e. abnormal vital signs), P – Precaution (isolation, falls)	General Nurses, Perioperative Nurses	Riesenberg 2009
4 P's	P – Purpose, P – Picture (what are the results/are we looking at), P – Plan (what did or didn't work), P – Part (what is your part during the next shift)	Not stated	Riesenberg 2009
AT MIST	A – Age, T – Time, M – Mechanism, I – Injuries, S – Signs, T – Treatment	Pre-hospital – Emergency Department	Loseby 2013
ISoBAR	I – Identify, introduce yourself and the patient, S – Situation, O – Observation (vital signs and assessment), B – Background, A – Agree to a plan, R – Readback and confirm understanding	Clinical handover in healthcare	OSSIE 2010

ISBAR	I – Introduction, S – Situation, B – Brief history, A – Assessment (what I think is happening), R Recommendations (what you're asking to be done)	Clinical handover in healthcare	OSSIE 2010
SHARED	S – Situation, H – History, A – Assessment and results, R – Risks (allergies, falls), E – Expected outcomes, timeframes and plan, D – Documentation (progress notes, care path, electronic health record)	Maternity services: Nurses communicating with visiting Medical Officers	OSSIE 2010
AMPLE	A – Allergies, M – Medications, P – Past Illnesses, L – Last meal, E – Events	Pre-hospital – Emergency Department	Iedema 2012
IMIST-AMBO	I – Identification of patient, M – Mechanism/medical complaint, I – Injuries/relevant information, S – Signs, vital signs, and Glasgow Coma Score, T – Treatment and trends or response to treatment, A – Allergies, M – Medications, B – Background history, O – Other information	Pre-hospital – Emergency Department	Iedema 2012
BAUM	B – Bestand (inventory), A – Anamnese (medical history), U – Untersuchengsergebnisse (clinical findings), M – Massnahmen (actions)	Pre-hospital – Emergency Department	Jensen 2013
PACE	P – Patient/problem, A – Assessment/actions, C – Continuing/changes, E – Evaluation	Nurses	Riesenberg 2009

How are mnemonics used in verbal and documented handover?

Mnemonics provide a framework for recalling verbal information by defining an expected structure (Loseby, Hudson & Lyon 2013; Riesenberg, Leitzsch & Little 2009; Stewart & Hand 2017; Talbot & Bleetman 2007; Yee, Wong & Turner 2009). Structure aids accuracy, maintains clarity (Bonacum 2008; Stewart & Hand 2017; Talbot & Bleetman 2007), and improves the efficiency of verbal handover (Blom et al. 2015; Iedema & Merrick 2008). Further, mnemonics create shared expectations (Cohen & Hilligoss 2009), increase the communicator's confidence (Bonacum 2008; Stewart & Hand 2017), and reduce the need for the receiver to ask questions (Bonacum 2008). Some authors suggest that the use of mnemonics in handover incites a predominately one-way, and thus potentially limiting, process for information transfer (Cohen, Hilligoss & Amaral 2012). Others, however, suggest that patient safety is increased through standardisation, which is purported to raise the profile of responsibility and risk management (Yee, Wong & Turner 2009).

Verbal mnemonics are adaptable to written documentation (Yee, Wong & Turner 2009). The basic sequence of information intended to be recalled verbally can be made available as pre-printed headings in hard-copy and/or electronic formats, enabling authors to be reminded of, and to enter, pertinent information in a readable and defined order (Cohen & Hilligoss 2009; Shah, Alinier & Pillay 2016). Documentation written using structured headings is also considered an important adjunct to verbal handover, particularly when the receiver does not know the patient (Blom et al. 2015).

In addition to a written structure, mnemonics have been modified to include accountability information by assigning authorship. Although the finding was not statistically significant ($p = 0.07$), Panesar et al. (2016, p. 67) found that adding a signatory requirement to the existing written SBAR framework increased completeness of data entered by doctors and nurses, even though completion of SBAR fields was not mandatory. This consequently improved completeness increased accountability and contributed to better multidisciplinary communication (Panesar et al. 2016).

Are mnemonics transferrable across settings?

Mnemonics are transferrable across settings if the underlying mnemonic headings remain broadly general. This is why SBAR can be used in a number of settings with seemingly limited similarity, such as in the nuclear industry and the space program, as well as across many areas in health care (Blom et al. 2015; Panesar et al. 2016). The broad headings of SBAR offer aid in information recall. In addition, the headings and the combination of

narrative and direct styles of communication elicited potentially underscore why SBAR is widely accepted (Bonacum 2008; Stewart & Hand 2017). However, in many instances the content of SBAR and other structured mnemonics are purposefully tailored to suit specific contexts (Iedema & Merrick 2008; Loseby, Hudson & Lyon 2013; Riesenberg, Leitzsch & Little 2009; Shah, Alinier & Pillay 2016; Talbot & Bleetman 2007). While tailored mnemonics may enhance the content and structure of communication intended for a specific purpose and setting (ACSQHC 2012b), it is unclear whether tailored mnemonics are transferrable across multidisciplinary clinical specialities and settings.

Some authors suggest that mnemonics may be transferrable, and, in some cases, adaptable to multidisciplinary handover (Iedema & Merrick 2008; Yee, Wong & Turner 2009). With the exception of Iedema et al. (2012), who employed reflexive video ethnography in the development of a handover mnemonic for paramedics, one reason for lack of clarity is that studies examining the effectiveness of standardised handover processes tend to report on the communicators' adherence to mnemonic structure. Least often examined is whether use of standardised mnemonics results in an improvement in patient outcomes (Manser 2013). Therefore, while current research implies that within-unit handover may be improved with a tailored mnemonic, it remains unclear whether tailored mnemonics can be successfully transferrable across multidisciplinary settings (Cohen & Hilligoss 2009).

Benefits and barriers associated with using mnemonics

Mnemonics are widely accepted (Bonacum 2008). The benefits of handing over information using a mnemonic format are frequently cited as: creation of a common language, a clear structure, and increased patient safety. Wide acceptance helps create a common language through which senders and pre-emptive receivers are aware of what information will be communicated and how. The benefits of this shared common language are that it creates more effective communication (Stewart & Hand 2017), increases the likelihood of continuity (Yee, Wong & Turner 2009), and assists in maintenance of focus, and, as a result, in comprehension of the information being received (Blom et al. 2015; Iedema & Merrick 2008). When mnemonic information sharing formats are used within like-for-like units, they are likely to be well received and well understood (Cohen & Hilligoss 2009).

The fixed sequence of all mnemonics creates structure, which easily lends itself to application in checklist form (Blom et al. 2015). Whether via mental run-through or by following hard-copy, communicators can use the simplicity of mnemonic structure to recall pre-defined information that their specialty considers pertinent, in a consistent and, therefore, predictable order (Loseby, Hudson & Lyon 2013). In many mnemonics,

particularly those created for pre-hospital services, adherence to structure prioritises facts and trends, thereby reducing the scope for communicators to add extraneous information. For receivers aware of the information sequence, prioritisation improves efficiency, limits repetition, and reduces the overall time taken in handover (Iedema & Merrick 2008).

Numerous authors suggest that patient safety is improved when a mnemonic structure is adhered to. This is an assumption based largely on evidence that structure improves completeness of information handed over when it is in an easily understood format (Panesar et al. 2016). Although not tested, the inference is that patient safety is likely to improve because mnemonics improve multidisciplinary communication (Panesar et al. 2016; Yee, Wong & Turner 2009). While it is possible that these benefits to patient safety occur, there is a dearth of evidence on this point.

The study of information handover using mnemonics is predominately unidirectional. One early study assessing retention of information by receivers when the mnemonic format 'DeMIST' (see Table 2.5) was used between pre-hospital care and ED, found that receiver recall of information was reduced by 7.4 per cent when DeMIST, as opposed to no specific format, was used. The authors postulate that limited training in the mnemonic, small sample size, and distractions from listening in ED may have affected the result (Talbot & Bleetman 2007).

Other authors suggest that mnemonics limit the potential for meaningful discussion, and, as a consequence, result in data transfers (Riesenberg, Leitzsch & Little 2009) that detract from negotiation and coordination across unit boundaries (Cohen & Hilligoss 2009). Others still suggest that communicators and receivers unduly focus their attention on a particular component of mnemonics. For example, in reference to SBAR, authors found that 'Situation' was prioritised compared to 'Background' or other cues (Joffe et al. 2013; Stewart & Hand 2017). This is unsurprising as the broad category labels of SBAR by themselves do not provide guidance on where detail ought to be provided. In handovers where the content is tailored by relevant clinical specialities, and enough flexibility is retained to accommodate circumstances, the content emphasis ultimately falls to the clinical user at the time (Cohen & Hilligoss 2009; Iedema & Merrick 2008). Conversely, rigid following of mnemonics likely fails to incorporate nuances of difference. Thus, adhering completely to a checklist format may lead to a lack of continuity and to communication breakdown (Cohen & Hilligoss 2009).

Mnemonics aid in providing convenient verbal and written summaries that focus on priorities identified by the communicator, while also serving to guide the attention of receiving clinicians (Cohen & Hilligoss 2009). This type of communication may work effectively within

units where the overarching goals of communication can be assumed. However, when applied across units and/or specialities, the unidirectional information flow suggests that pertinent information at the time of handover is heavily reliant on the summary given by the communicator; yet progression of care is determined by the engagement of the receiver and their interpretation of that information (Jensen, Lippert & Ostergaard 2013). Strict adherence to the structure of a mnemonic potentially limits negotiation and discussion by maintaining a narrow focus of information, thereby reducing patient safety.

Summary

Structured mnemonics in verbal and written handover documentation improve information consistency and maintenance of prioritised information. It is likely that application of mnemonics to written documentation, in the same was as they are used verbally, further contributes to information consistency and ease of reference for future readers. However, it is also likely that this consistency is limited to the primary focus, and that professional clinical discretion at the time of the transfer event still plays a role.

Numerous variables influence the information focus and overall comprehensiveness of shared information when mnemonic formats are used. A mnemonic structure may prompt and guide the order of a verbal handover, but potential for communication breakdown still exists. This is in part due to there being multiple different understandings of how mnemonics can be applied, a unidirectional flow of information, a limited focus on the transfer event, and reduced opportunities for discussion and negotiation.

2.7 Electronic ‘e-health’ documentation

The simplest definition for e-health documentation is offered by the World Health Organisation: ‘the use of information communication technology for health’ (WHO 2006a). E-health records intended to increase communication between health services have been integrated across the globe (The Commonwealth Fund 2013). It is thought that incorporating medical records into electronic databases, not limited to clinician-specific encounters, improves continuity of care for patients moved between health services. Improved care and continuity through e-health records is attained by enabling increased timely access, and access that is shared by a wider range of providers. Current data storage models used to achieve integration vary between centralised national servers and locally based systems. In many countries, these formats of integrated documentation/information systems are still being developed (The Commonwealth Fund 2013). In Australia, the Australian Digital Health Authority (ADHA), known before July 2016 as the National Electronic Health Transition

Authority (NEHTA), is the peak body responsible for the national transition to e-health records (Australian Govenrment: ADHA 2018). The role of the ADHA is to strategically implement a system that will easily enable access to and sharing of information between clinicians and improve capacity to coordinate and improve the quality of care people receive (Australian Govenrment: ADHA 2018).

The present review found two main types of e-health documentation. The first, Electronic Medical Records (EMRs) are created and maintained by an organisation in a capacity that is limited to the needs of that organisation (Alexander et al. 2016; Phillips et al. 2010). The second, Electronic Health Records (e-HRs) are patient-oriented, and are intended for multi-clinical service providers, for longitudinal data entry, and for bi- and/or multi-directional access for the lifetime of the patient (Alexander et al. 2016), or until such time as the affected party has withdrawn consent to their access (Vest et al. 2011). This section focuses on information technology (IT) systems used for documentation in RACFs, and on the benefits and barriers of the transfer of electronic-documentation from RACF to ED.

e-documentation in RACF

The installation of e-documentation infrastructure in Australian RACFs began slowly, following trials of various systems in 2002. Installation uptake was accelerated by a one-off government payment of $1,000 per individual resident, an incentive rolled out by the Minister for Ageing in the mid 2000s (Yu 2012). As numerous IT vendors generated several products for the trials, all with generally beneficial outcomes, no one specific vendor was endorsed by the government. These IT systems all incorporate elements which ease funding and accreditation documentation and reporting burdens on RACFs, thus the decision to select and purchase a system capable of fulfilling any additional organisational needs was left up to individual sites (Yu 2012).

The benefit of variety for RACFs was and continues to be that managers can selectively purchase programs tailored specifically to the needs of a site. For example, geographically separated RACF sites run by the same organisation with slightly different levels of service provision may opt to structure their IT systems differently (Yu et al. 2013). A problem with the variety of software available is that, even when purchased from the same IT software company, a workable system interface is not necessarily guaranteed (Phillips et al. 2010; Yu et al. 2013).

EMR systems used by RACFs are generally not interoperable with either other EMRs or e-HRs held outside of the RACF services (Phillips et al. 2010). In an attempt to work around

system integration limitations, some associated services in the USA and Canada have integrated direct messaging via email into existing systems (Alexander et al. 2016; Hustey & Palmer 2010; McMurray et al. 2013). Though information sent via email is limited and tends to be view only, it has enabled the scanned transfer forms to be sent directly to hospitals affiliated with the RACF, rather than sending information via fax, or sending hard copies of notes with residents (Hustey & Palmer 2010). In Australia, IT systems in RACFs tend to be EMR-oriented and geared toward meeting the needs of RACF reporting and accreditation requirements rather than cross-clinical specialty information sharing (O'Malley et al. 2010; Yu 2012). In order to communicate information for RACF residents across services, print-outs or photocopies of resident records must be generated and sent in hard-copy.

EMR systems in RACFs are not exclusively electronic. Most RACFs run parallel electronic and paper documentation systems (McMurray et al. 2013; Phillips et al. 2010). The practice of dual record keeping has been justified in terms of keeping paper records in case of electronic system malfunction (Yu et al. 2013), a lack of flexibility on e-documentation charts, such as the inability to draw diagrams, lack of descriptive drop-down options (Hahn et al. 2011), and lack of access to computers at point of care locations (Yu et al. 2013). Paper-based documentation provides a convenient system to work around inefficiencies of electronic records (McMurray et al. 2013; Phillips et al. 2010).

Visiting clinicians, such as GPs and physiotherapists, may also document their findings on paper on-site at the RACF. Reasons for visiting clinicians' preference for using paper-based entries include time constraints and frustrations with accessing multiple different RACF system logins, as well as lack of trust in RACF EMRs (Yu et al. 2013; Chang et al. 2009). Visiting clinicians may also double document or forgo entering notes on-site and instead make entries in their own clinical practice records off-site in preference to using RACF paper records. The current structure of the national electronic My Health Record, in the process of being rolled-out across Australia, is unlikely to change dual documentation requirements, as patient summaries must first be created in the service provider's service-specific electronic system and then uploaded to the resident's My Health Record (Australian Digital Health Agency n.d.-a).External service-provider records are generally not linked to RACF EMR systems (Alexander et al. 2016; McMurray et al. 2013; Yu et al. 2013), and few RACFs have registered for the My Health Record system (Australian Digital Health Agency 2018; Australian Institute of Health and Welfare 2017; NSW Government 2015).

The generation and storage of RACF health records in multiple locations undoubtedly creates challenges in accessing and collating information for transfer at short notice.

Summary

Electronic documentation systems are expensive undertakings that require the installation of purpose-built infrastructure, IT, software, ongoing maintenance, and system updates (Phillips et al. 2010; Stoyles 2017; Yu et al. 2013). E-documentation frameworks in Australian RACFs with wide-ranging software functions are available as a result of competition to develop e-documentation supportive of verification for the purpose of funding claims and compatible with audit (Yu 2012). These design features have led to two discernible outcomes.

The first is that the range of products has created competitive pricing, thereby increasing affordability and uptake of e-documentation systems (Yu 2012). However, choice of IT products and installation leads to a lack of uniformity. Unregulated product selection has contributed to a lack of interoperability between and across different RACFs (Phillips et al. 2010; Yu et al. 2013). Any improvement in RACF system inter-operability is likely to be slow due to the significant costs of modifying or upgrading existing software platforms and infrastructure.

The second is that e-documentation for funding and accreditation has taken priority over clinical documentation in RACFs (Yu et al. 2013). The software does facilitate some forms of clinical documentation (Chang et al. 2009; Hahn et al. 2011; Phillips et al. 2010; Zhang, Yu & Shen 2012), but the overall successfulness of using a stand-alone electronic tool to create records is unclear (Chang et al. 2009; Hahn et al. 2011; Yu et al. 2013). The practice of dual documentation means that clinical information is located in more than one place. In particular, specialist entries may be documented in off-site systems without a linked or even compatible interface (Alexander et al. 2016; McMurray et al. 2013; Yu et al. 2013). The practice of recording information in multiple locations means that retrieval or collation of comprehensive information using these systems presents geographical challenges. Without electronic integration, and when attempted after normal working hours, these challenges are likely to be particularly difficult.

Benefits and barriers

EMR documentation in RACFs is said to improve timeliness of data entry, with associated improvements in data storage and retrieval. One Australian study involving nine different RACFs belonging to three different organisations across three states, interviewed 110 clinicians, and found that 37 per cent said data entry using the RACF EMR was quicker than using paper records. Participants stated that they also utilised copy and paste functions and

numerous login terminals to facilitate their entries (Zhang, Yu & Shen 2012). As data were stored with secure back-up, participants also felt that information was less likely to be lost or subject to unauthorised editing or deletion. In addition, retrieval of information was aided by its being accessible at more than one terminal, improving on data retrieval from a single location and potentially enabling access to information closer to the point of care (Zhang, Yu & Shen 2012).

EMR documentation in RACFs also facilitates structured data storage. The IT design of EMRs tends to fit with RACF data reporting requirements (Yu et al. 2013). Accordingly, the EMR structure is designed to enable retrieval of audit data for accreditation and fiscal remuneration (Hamilton & Menzes 2011; Yu et al. 2013). In addition, the structured approach of documentation facilitated by the EMR is also said to improve provision of care to residents. A uniform structure combined with ease of access increased clinical readership, allowing clinicians responsible for direct care a more holistic view of care requirements, and the understanding to respond to changing care needs more quickly (Zhang, Yu & Shen 2012). For example, EMRs can contribute to improved documentation of Advance Care Directives (Phillips et al. 2010). Clinicians are more likely to act in accordance with residents' pre-defined wishes if the information is available at the point of care (Ayatollahi, Bath & Goodacre 2009).

EMR documentation in RACFs improves decision-making by off-site clinicians (Alexander et al. 2016; Phillips et al. 2010). Where RACF IT has enabled direct messaging via email, imaging reports and pathology results or photographs of wounds can be shared in a 1:1 communication format (Alexander et al. 2016; Zhang, Yu & Shen 2012). Timely access to results enables external care providers to make assessments and informed decisions without physically attending the RACF (Alexander et al. 2016; Chang et al. 2009; McMurray et al. 2013; Phillips et al. 2010; Zhang, Yu & Shen 2012).

However, EMR documentation in RACFs is not always attended to contemporaneously. Late entries negatively affect the currency of information for oncoming staff (Yu et al. 2013). A reason for this may be a lack of computer terminals in clinical locations, which, when available, are often affected by poor Internet connectivity (Alexander et al. 2016). Computer access terminals are often located in nurses' stations or offices, away from direct points of care (Alexander et al. 2016). Having to leave clinical areas, as well as issues with poor connectivity create frustration for care staff who are already time poor. As e-documentation can be time-consuming, particularly when Internet connections are unreliable, provision of physical care to residents is sometimes prioritised over leaving the point of care (Yu et al. 2013). Yu et al. (2013), also found that, when IT access was poor, updating residents EMRs

was at times put off until the next day's staff were on shift. This practice suggests a high risk of entries being made in the incorrect resident's EMR, as well as a significant risk of readers making a clinical error based on incorrect or out-of-date information, and a significant risk of out-of-date information being sent to the ED in the event of transfer.

The use of dual paper and electronic documentation often results in data storage in multiple locations. One means of getting around poor EMR access and/or inappropriate drop-down menus is to use paper documentation. Paper records housed in clinically convenient locations aid timely data entry, and, unlike EMR systems, paper records support generation of graphs and/or visual representations (i.e. of wounds) (Yu et al. 2013). Some RACFs also use paper records to keep abreast of shift-to-shift communications, such as care plans and doctors' memoranda (Yu et al. 2013; McMurray et al. 2013). To ensure information currency, use of hybrid documentation systems, such as the dual EMR/paper system, requires that staff be familiar with the system in order to know where to document changes and where to look for the most recent information.

Updating and retrieving documentation in the EMR can be time-consuming or difficult. Some documents created in the EMR, such as resident care plans, require regular updates. Users of one RACF EMR reported that care plans were relatively easy to create but challenging to update (Yu et al. 2013). For example, updating the care plan did not renew the date confirming the time of the latest change to the care plan. The date could only be updated if an entire new care plan was created. Creating a new care plan is a time-consuming process. Therefore, as Hahn et al. found, EMRs did not improve practice documentation, and care plans were more simply updated on paper; staff accessing the electronic version of the care plan had no way of knowing how recent the information was (Hahn et al. 2011; Yu et al. 2013).

In contrast to retrieving EMR data for audit, accreditation and/or fiscal purposes (Chang et al. 2009; O'Malley et al. 2010; Yu 2012), the process for retrieving clinical information was more difficult (McMurray et al. 2013; Yu et al. 2013). Participants interviewed by Yu et al. (2013) reported challenges finding relevant information, and difficulty moving between separate sections of the EMR. Concerns regarding the quality and currency of information were also raised. One participant in another study expressed exasperation with the process of retrieving data from the EMR when they stated that 'trying to find information is like hating yourself every day […] If they made it simpler, like paper – flip here – you find it' (McMurray et al. 2013, p. 228).

Summary

A review of benefits and barriers to RACF use of EMR documentation in the studies above revealed contradictory findings. Several studies found that EMR systems improved the timeliness of documentation entries, information storage (Yu et al. 2013; Zhang, Yu & Shen 2012), and data retrieval (Chang et al. 2009; O'Malley et al. 2010; Yu 2012), yet difficulties in access to computer terminals leading to documentation delays and challenging clinical data retrieval were also identified (Alexander et al. 2016; Yu et al. 2013). This contradiction suggests that some RACFs may have better IT systems and infrastructure than others and supports the finding by Alexander et al. (2016), that combining administrative operations (eg remunerative) with clinical care documentation within the same system requires sophisticated levels of IT support. In addition, ease of access to e-HR information improved readership and, by association, decision-making timeframes (Alexander et al. 2016; Chang et al. 2009; McMurray et al. 2013; Phillips et al. 2010; Zhang, Yu & Shen 2012). However, updating an e-HR without being able to date the entry fostered concerns about the information's currency, and, therefore, its reliability (Hahn et al. 2011). Lack of confidence in EMR documentation due to its being out-of-date suggests that reports of the benefits to improved, timely decision-making may be premature.

Benefits and barriers to electronic information transfer from RACF to ED

Few external services, including EDs, are able to access RACF EMR information (Alexander et al. 2016; Vest et al. 2011; Yu 2012). Therefore, information transfer across services must employ other means. Fully operational e-document/record integration requires at least bi- but more appropriately a multi- directional e-HR capable of supporting multiple geographically distinct access points. This requires users (senders and receivers) to have interoperable IT systems (Alexander et al. 2016). One communication system close to achieving this is the Integrated Care Collaboration (ICC) used in central Texas. In this system, member organisations subscribe to a centralised clinical data repository known as I-Care. I-Care exists independently from its member organisations – which act as individual data repositories. Information is uploaded to I-Care each night and matched to patient records. Member organisations can then access patient records with the consent of patients (Vest et al. 2011).

However, it is unclear if EDs that can access multi-directional IT systems find that it adequately conveys complex information for residents with complex comorbidities transferred from RACF to ED. Several studies found that ED clinicians would prefer e-information rather than hard-copy documents from RACFs (Chang et al. 2009; Vest et al.

2011), although the convenience of access to I-Care for ED clinicians in the study by Vest et al. did not translate into increased I-Care readership. Cross-sectional analysis of system user logons found that while 82 per cent of the 271,305 ED presentations studied between January 2006 and 30 June 2009 had enabled access to I-Care, only 2.3 per cent of users with logon permission in EDs accessed patient information from the system (Vest et al. 2011, pp. 144–146). The authors suggest that one reason for this may be that I-Care contains only basic information, therefore ED clinicians are likely to access sources other than I-Care for greater detail (Vest et al. 2011, p 148). Another reason may be that multi-directional IT access is costly, and few localities have fully integrated, interoperable systems (Alexander et al. 2016; Vest et al. 2011; Yu 2012).

There is a lack of trust in the comprehensiveness and/or currency of information produced in e-documentation summaries sent to ED (Chang et al. 2009; Hahn et al. 2011). Even with multi-system user access to EMR data, McMurray et al. found that ED clinicians continued to request faxed and paper-based documentation in preference to EMRs (McMurray et al. 2013). In addition, some RACF staff expressed difficulty retrieving information needed to produce transfer summaries, indicating that, at times, the information was not printed and sent because of lack of access or know-how (Yu et al. 2013). Adding to a lack of trust in the currency of information is that GP transfer summaries are rarely included in RACF EMRs. Rather, GP visit summaries are likely documented in a separate GP facility EMR, which cannot be accessed and included in the RACF Transfer information as the two systems are separate and lack the necessary interoperability. Further, in compilations of transfer information, ‘No one clinician took responsibility for transitional care, thus a patient’s safety, was dependent on accurate, complete summary information being available’ (McMurray et al. 2013, p 13). It is likely that a combination of incomplete documentation, and/or concerns regarding the currency of e-documentation (as discussed above) contributes to lack of trust of received e-document summaries in EDs.

Summary

The current use of EMR systems in RACF is not optimal. The prevailing use of EMRs in RACFs is to facilitate intra-organisational reporting and other fiscally-oriented reporting requirements. RACF EMR systems lack a compatible interface across geographically separated but same-owned RACF organisations, as well as with regular visiting service providers such as GPs and physiotherapists. Further, RACF EMRs lack system interoperability with wider tertiary service providers such as EDs. It is likely that the cost of designing, implementing and supporting such an e-HR system, combined with challenges in

determining and addressing privacy concerns, contributes to this gap in e-documentation capabilities.

This review also identified a lack of trust and/or a significant degree of frustration contributing to minimal clinician access to the few e-HR systems that are multi-directional and interoperable. Although the literature frequently predicts better information transfer and timely access to information when e-HR is successfully implemented, the findings highlight as yet minimally positive impacts on information access for ED clinicians. Research has focused on the frequency of cross-site EMR access, but there is a shortage of literature that qualitatively investigates (dis)satisfaction with accessible data.

2.8 Chapter summary

The primary search aimed to uncover literature inclusive of all three services and, thereby, to represent what is known about cross-disciplinary, inter-facility information sharing from RACFs to EDs via ambulance as a lineal process. However, information inclusive of all three services in the context of information transfer in a single study was scant. The scope of the review was broadened to include literature concerning RACF-to-ED transfer more generally, finding that the majority of information focused on EDs receiving information from RACFs, as well as on ambulance clinician acute medical and trauma handovers to ED resuscitation staff.

This literature review highlighted that residents of aged care facilities are frequently transferred to tertiary centres (i.e. EDs) with a range of urgent and non-urgent conditions (Arendts, Dickson, et al. 2010; Briggs et al. 2013; Carter, Skinner & Robinson 2009; Hillen et al. 2011; Kruger et al. 2011). There is widespread agreement that some residents may be better served by receiving care from alternative service providers, or at their place of residence, an RACF (Arendts, Dickson, et al. 2010; Carter, Skinner & Robinson 2009; Codde et al. 2010; Finn et al. 2006). Australian RACFs are a variety of profit and not-for-profit organisations that are largely staffed by care assistants and whose funding is directly related to the level of care provided to individual residents to assist them with their activities of living (Cepar: ARC Centre of Excellence in Population Ageing Research 2014; DOHA 2013). If the provision of increasingly acute care is to be undertaken by RACFs, restructuring of the functional roles of social accommodation services, staffing, organisational structure and funding would be required. Calls to legally identify RACFs as health care organisations – which would aid in implementing these changes – have been made, but are yet to be acted upon (ALRC Recommendation 62-2 The Privacy Act). In light of this information, this

review highlighted that transfers from RACF to ED for urgent and non-urgent cares is appropriate.

RACF-to-ED transfers have been explored through prevalence (Codde et al. 2010; Finn et al. 2006), survey (Belfrage et al. 2009; Gillespie et al. 2010), content analysis (Boockvar, Fridman & Marturano 2005; Givens et al. 2012; Kirsebom, Wadensten & Hedström 2013), observation and interview (Bruce & Suserud 2005). These methods have successfully highlighted the rising incidence of transfer and information-gap problems. Their findings have had limited sustained effect on reducing the prevalence of information gaps. This author considers that cross-disciplinary, cross-service information transfer studies need to retain a focus on the empirical *alongside* more practical inquiry. Concurring with the meta-theoretical approach suggested by other authors, a pragmatic approach that identifies the problem and uses it to guide the study is the model the author has applied in this study (Craig 2016; Elder-Vass 2012).

There was limited consensus on the content of transfer information across services, despite widespread calls for standardisation (Cwinn et al. 2009; Dalawari et al. 2011; Griffiths et al. 2014; Parashar, McLeod & Melady 2017; Platts-Mills et al. 2012; WHO 2006b), and general consensus on the prevalence and nature of missing information (Cwinn et al. 2009; Hoare 2009; Platts-Mills et al. 2012), which tended to be considered from the perspective of information receivers such as ED clinicians (Parashar, McLeod & Melady 2017). However, there was a dearth of literature on the focus of information that *was* written in the transfer entries. With the goal of standardisation, this study applies a common mnemonic to the transfer narratives of each group of interest.

The literature also highlighted that information transfer from RACF to ED is reliant on the use of artefacts. The most common artefacts associated with information transfer are paper, electronic and structured verbal tools (Belfrage et al. 2009; Blom et al. 2015; Dalawari et al. 2011; Iedema et al. 2012; Kelly et al. 2012; Pearson & Coburn 2013; Riesenberg, Leitzsch & Little 2009; Zafirau et al. 2012). These tools are frequently noteworthy for their structure and capacity to generate consistently formatted, organised information (ACSQHC 2012b; Bonacum 2008; Iedema et al. 2012; Stewart & Hand 2017). However, transfer tools are predominantly reviewed from the receiver's perspective, and their success or failure measured against pre-determined essential elements of transfer and continued use over time (Belfrage et al. 2009; Dalawari et al. 2011; Hoare 2009). Yet material artefacts used for transfer documentation also have quintuple agentic qualities inclusive of: clinical application; integration into service role; recording for service audit; government audit and coherence with HSO recommendations, which are missing from studies of transfer from RACF to ED

(Cepar: ARC Centre of Excellence in Population Ageing Research 2014; Silk 2016; Sullivan et al. 2016; Tasmanian Audit Office 2016; Tasmanian Government 2011). The properties of tools are multifarious and cannot be considered in isolation from one another. This study acknowledges the broader social properties and agentic nature of artefacts throughout the study, and incorporates this knowledge into the final discussion and conclusion.

There is a clear information gap surrounding transfer documentation practice and the context of work-task practices in cross-disciplinary, cross-organisational transfers from organisational social perspectives. The link between RACF Transfers and organisational capitalisation, (e.g. managing finite labour and physical resources in primary and tertiary care environments) is often referenced alongside whether or not transfers from RACF to ED are appropriate (Arendts, Dickson, et al. 2010; Carter, Skinner & Robinson 2009; Codde et al. 2010; Finn et al. 2006). An examination of social practice embedded in transfer documentation has potential to uncover what different information is prioritised from the contextual perspective of clinicians carrying out the task of transfer and why. For example, in previous studies, perspectives of social practice in workflow successfully identified how clinicians approached their work in a particular manner, highlighting why some tasks were facilitated, worked around or omitted (Nicolini 2009). Understanding what and why different information is prioritised will help develop an understanding of why gaps in transfer information endure. In addition to looking for standardised information correlating with a common structured mnemonic, this study also explores socio-contextual practises embedded in the free-text of transfer documentation.

This literature review highlighted that few studies of resident transfer are inclusive of RACF, ambulance and ED triage clinicians. There is a dearth of literature inclusive of ambulance paramedics receiving information from RACFs and on continuing the handover of that information to EDs. Given that paramedics provide the link between RACF and ED, and that RACF nurses primarily orchestrate transfer, this is an obvious information gap. Studies of RACF Transfer to EDs often narrow their focus to the appropriateness of transfer and potential for care to be provided elsewhere (Briggs et al. 2013; Carter, Skinner & Robinson 2009; Finn et al. 2006). In contrast, research on handover between paramedics and ED clinicians has tended to focus on traumatic or urgent medical scenarios (Iedema et al. 2012; Jenkins 2013; Loseby, Hudson & Lyon 2013). Given that almost all transfers from RACF to ED are carried out via ambulance, without the accompaniment of person(s) who know the resident well, this is another striking information gap. This study is inclusive of RACF, ambulance and ED triage transfer documentation, and, where possible, follows the process

of written information transfer as to the endpoint of ED triage. A further intention of this study is to advocate for equitable access to services and care for the aged.

Chapter 3: Methodology and Method

3.1 Introduction

Notwithstanding decades of acknowledgement, research, and attempts to address the problem of information shortfall during RACF-to-ED transfer, missing information has remained one of cross-specialty transfers' most long-standing features. The aim of this study is, accordingly, to identify practice contributing to the durability of information gaps in the transfer of aged residents from RACF to ED via ambulance.

To achieve its aim, this study examined documents sent with RACF residents, and explored the accompanying context-specific transfer entries for 80 individual transfer cases, generated by the referring RACFs, Tasmanian Ambulance Service, and ED triage. The purpose of this chapter is to outline the theoretical underpinnings and methods applied in order to address the research questions guiding this study.

The questions driving this research are framed in a post-positive constructionist ontology. A pragmatic approach enabled the research questions to drive the method of inquiry (Polit & Beck 2017). Post-positivism, most often associated with quantitative methods, and constructivism, most often associated with interpretive or qualitative methods, were both deemed appropriate (Polit & Beck 2017). A mixed method approach was selected to produce complex and complementary information and to ameliorate the limitations inherent in both genres of study (Cresswell & Plano Clark 2011). A variant of the convergent parallel study design was used to gather quantitative and qualitative transfer data from RACF, ambulance paramedic and ED triage documentation. After collection, the data were separately analysed. Quantitative content and category counts were analysed with the assistance of IBM Statistical Software SPSS (Version 21). Nicolini's (2009) examination of work practices' model of 'zooming in' and 'zooming out', and Schatzki's (2001; 2005) Practice Theory guided qualitative data coding and analysis. Results and findings from the quantitative and qualitative datasets were considered in the context of broader organisational phenomena and then brought together in discussion. The practices that contribute to gaps in transfer information for RACF residents were ultimately identified through combined inquiry into system function, contextual, and referential perspectives on work-practices.

This chapter provides the rationale for aligning a pragmatic theoretical approach to this mixed method study. The research questions and sub-questions are presented. An explanation of Practice Theory (PT) follows, with specific processes linked to quantitative

and qualitative method also discussed. Ethics approval is also detailed, along with the researcher's professional positioning. Data sources, data collection, and processual issues encountered during the study are described, before a summation of method relevant analytical processes. Strengths and limitations are outlined prior to the conclusion of the chapter.

3.2 A pragmatic theoretical framework

Pragmatism means starting with a problem and recognising that it will be best solved using the most appropriate methods and theory. Pragmatism is therefore not limited to a single theoretical worldview and is often associated with mixed method research (Reich 2009). Pragmatism as a theoretical worldview is primarily credited to the American philosophers Charles Sanders Pierce (1839–1914) and William James (1842–1910) (Hookway 2016). Early pragmatism focuses on the individual, and is oriented toward beliefs about habits of action, and how control or modification of action can be gained through experimentation (Bergman 2008). This interpretation created challenges in reconciling pragmatism with social theory (Maxwell & Mittapalli 2010). However, later theorists of pragmatism, in particular John Dewy (1859–1952) argued that an understanding of situationally contingent insights, such as individual habits of action, are enhanced through constructivist inquiry (Bergman 2008; Hickman 2009). Pragmatic inquiry, which embraces inductive and deductive methods, is concerned with action(s), and with the value of knowledge in the context of practice (Goldkuhl 2006). Proponents of pragmatic inquiry agree that the overall methodological approach should be guided by research questions (Polit & Beck 2017). The questions guiding this research were formulated after recognising that gaps in transfer information affect the care of RACF residents in ED and were a significant feature (by their absence) of transfer documentation.

Research aim

The aim of this study is to identify practice contributing to the durability of information gaps in the transfer of aged residents from RACF to ED via ambulance. The research questions posed were:

- What common information transfer tools are in use in Tasmania, and how (if at all) do transfer tools affect the information about residents transferred from RACF to ED via ambulance?
- What documentation practices are common to the transfer of residents from RACF to ED via ambulance?

- What socio-contextual practices are evident in the transfer documentation of residents transferred from RACF to ED via ambulance?

The organisational groups of interest in this study are RACFs, ambulance services and EDs. These organisations are represented in documentation by RACF nurses, ambulance paramedics and ED triage nursing staff. This study recognises that no two transfers from RACF to ED via ambulance are subject to the same conditions, and that the process of transfer explicitly requires clinician engagement with organisational rules and norms. The research questions imply that clinical transfer can be explored through material and non-material things (artefacts) which shape practice and affect the interplay between action and purpose (Craig 2016), and as contextually-specific repetitions of reference along a continuum (Orlikowski 2007). As drivers of pragmatic methodological approach, the research questions dictate a framework capable of embracing situated contexts, situated documentation and actions, and the relationships(s) between material and non-material arrangements and social practice, in recognition of transfer as an interconnected web of actions.

However, theories investigating information exchange that examine service domains in a dynamic relationship with documents and documentation practices are difficult to find outside of Information Systems research (Dobson 2002). In order to draw out complex practices, this study argues that social phenomena relevant to the organisations and the environments within which clinicians generate and reinterpret information need to be accounted for. Borrowing theories that have been used in information *and* social systems research may be an informative way forward for researchers studying cross-disciplinary, cross-service information exchange. As information practice is the central focus of this study, Schatzki's (2001; 2005) Practice Theory (PT) was chosen as the guiding social theory of choice. The following is a discussion of PT that provides the framework for understanding practices in this study.

Practice Theory

Practice Theory is a social theory, stemming from several 'influential and diverse approaches' (Nicolini 2012, p. 214). Most prominently, the foundations of PT are drawn from Bordieu, Giddens, Wittgenstein and Foucault, and later from Lyotard, Garfinkel, Latour, Charles Taylor and Judith Butler (Reckwitz 2002b; Warde 2014). There are consequently multiple applications for PT depending on the researcher's interpretation and focus. These include, for example, but are not limited to, applications in management learning (Corradi, Gheradi & Verzelloni n.d.), communities of practice (Lave & Wenger 1991), information

literacy (Lloyd 2012) and behaviour (Salvolainen 2007), learning and knowing in organisations (Gheradi 2008), organisational strategising (Suddaby, Seidl & Le 2013), consumption (Warde 2014), and geographical inquiry (Everts, Lahr-Kurten & Watson 2011). Though most theorists agree that practices are conceived as 'arrays of activity' that are 'embodied in a nexus of practices, mediated by artefacts, hybrids and natural objects' there is no one, unified theory of practice that can be followed on its own (Schatzki 2001, p. 11). The following section introduces Schatzki's PT and site ontology, and outlines the benefits and limitations of the approach relevant to this research (2001, 2005b).

'[A] practice is a set of doings and sayings organised by a pool of understandings, a set of rules, and a teleoaffective structure' (Schatzki 2005a, p. 62). Though viewed as bound together, nexuses of activities are broken down into practices described as integrative or dispersed. Integrative practices are complex. They are inclusive of dispersed practices and activities, 'which are constitutive of particular domains of social life' (Schatzki 1996, p. 98, cited in Lloyd 2010). Examples of integrative practices include mentoring, teaching and nursing. Dispersed practices centre on specific types of action that form a practice, such as questioning or describing (Lloyd 2010), or specific actions such as applying hand sanitiser or taking a blood pressure reading.

Understandings are abilities that link actions composing a practice. An example of this is 'knowing how' to do something, or pooling a particular set of skills to perform an activity. For example, hanging a picture requires knowledge of finding the wall stud, hammering in a nail, placing the picture, and adjusting its level. Other examples are knowing how to identify, prompt, and/or respond to something. Knowing how, therefore, represents an actor's ability to cross-reference their bank of knowledge in a given circumstance and to proceed with an action that makes sense to perform (Schatzki 2005a). In addition, many actions are governed by rules. Some rules explicitly inform actions, while others regulate activity as general rules of thumb. Regardless of the type of rule, how it is followed largely depends on an actor's awareness or understanding of that rule and their understanding of how it might apply or be evaded in a particular circumstance (Schatzki 2005a).

The term teleoaffective describes 'a range of acceptable or correct ends, acceptable or correct tasks to carry out for these ends, acceptable or correct beliefs (etc.) given which specific tasks are carried out for the sake of these ends, and even acceptable or correct emotions out of which to do so' (Schatzki 2005a, p. 62). This suggests that teleoaffective structures gain acceptance through normativities, and that individual actors participate in the enactment of normative practices without being completely aware of any primary intentionality. In turn, this implies that, though dispersed throughout practices, the agency

afforded to teleoaffective structures does not necessarily align with that of individuals (Caldwell 2012).

Schatzki favours the idea that human activity and associated material arrangements form the central feature of social life. All practices are inherently ontological because the understandings and knowledge that govern practices are part of the 'site' (Schatzki 2005b) rather than of individuals (Lloyd 2010). The 'site' referred to *is* the context of any given practice and its arrangement *as* a practice (Everts, Lahr-Kurten & Watson 2011; Lloyd 2012), including social orders, and the material and non-material (Everts, Lahr-Kurten & Watson 2011). For example, the layout of a kitchen is as much an order as is the recipe or routine, the memory of grandma's time-honoured favourite, or the timer set to ring when it's finished cooking. Practices are thus intermingled with artefacts, understandings, rules, and teleoaffective structure and context (Schatzki 2005b).

The implications of this for studying RACF-to-ED transfer via ambulance framed by Schatzki's site ontology are that the discursive actions of transfer, *and* practice arrangements, or enduring socio-material phenomena relevant to though derived from different organisations can be critically explored. The appropriateness of applying a PT framework to the study of three separate groups of interest in this mixed method study will now be outlined.

PT enables a focus on practices within groups

Theories of practice aim to reconcile structure and agency in an account of social action (Warde 2014). Schatzki's PT (2001,2005), differs from other PT approaches as it enables researchers to examine the social actions of groups in a move away from individualistic interpretation. What groups *do* in practice is prioritised over discourse. 'Doings' are informed by 'all kinds of dispositions, behaviours, rules, pre-reflective habits and background assumptions' (Caldwell 2012, p. 289). By drawing out references to what clinicians document they do in transfer, it is possible to explore and differentiate between the findings of previous studies identifying how clinicians 'understand […] what to do' to move towards an understanding of 'what is done' (Caldwell 2012, pp. 288–289). Drawing attention to what is done is appropriate in this study, as clinicians not only document patient information; they also document the decision-making, tasks, and conversations comprising the overall enactment of transfer.

PT allows for examination of wider, complex influences

'Teleoaffective' is the term Schatzki applies to a set of features that are the acceptable cultural properties of a practice (Lloyd 2010). While teleoaffectivity includes actions, emotions and moods, its particular relevance in this study is that it also includes rules, ends, intentions, and/or goals, purposes and tasks (Schatzki, Knorr Cetina & von Savigny 2001). Previous studies on handover between RACF and ED have often been outcomes-focused, and highlighted the problem of information gaps (Abraham, Kannampallil & Patel 2012; Cwinn et al. 2009; Morphet et al. 2014; Nelson, Washton & Jeanmonod 2013) without necessarily exploring in detail other organisational normativities that consciously and/or subconsciously shape action (Lloyd 2010). Studies that have done so have tended to be limited to content relevant to particular environments (Evans et al. 2010).

Nicolini's 2006 study of patient follow up in telemedicine exemplifies the appeal of PT. The study identified practice rules and norms (i.e. the nurse-oriented schedule for long distance monitoring of cardiac patients), and observed nurses as they made follow-up calls. The author was able to draw out the situated practices the nurses used in addition to the call schedule and from that understanding were able to explain why following the rules is neither always desirable nor ever 'completely self-evident' (Caldwell 2012, p. 289; Nicolini 2009). This study explores artefacts used in transfer, their formal design and functional intent. In also exploring discursive reference to transfer practices in the narratives, this study draws out the situated practices that clinicians reference.

PT considers that artefacts have agency

Artefacts are inextricable from their social role (Pierides & Woodman 2012). Schatzki defines practices as 'embodied, materially mediated arrays of human activity' (Schatzki 2001, p. 12). Embodiment emphasises routine bodily movements as performances of action (Reckwitz 2002b). Nicolini's study of telemedicine demonstrated embodiment following observations of nurses as they performed telemedicine call-backs (Nicolini 2009). As this study intends to explore retrospectively collated transfer data, and not to use observation, a lack of fit with PT is possible. However, Orlikowski (2007), in a point of departure seeking to explore artefacts in human action, suggests the term 'socio-material practices' rather than 'social practice' to define the agency of artefacts in shaping human practices. Although drawing away from an emphasis on humans, this definition is not at odds with Schatzki, who states that 'the nexus of practices are mediated by artefacts, hybrids and natural objects' (Schatzki, Knorr Cetina & von Savigny 2001, p. 15), nor Reckwitz, who states that 'doings must almost necessarily be doings with things' (Reckwitz 2002a, pp. 211–212); this is the definition used in this study.

PT considers that not all things are material

For a document/tool to have an effect it must be understood, used, and, further, used within the accepted normative cultural practices of a site (Reckwitz 2002a). Some 'things' in health care have already been examined in studies on technology and medical practice information systems (Ambulance Victoria 2012; Heath, Luff & Sanchez Svensson 2003; Ludwick & Doucette 2009). Largely focusing on manmade artefacts, such as checklists and standard operating procedures, studies such as these do not focus on drawing out representations of non-material cognitive artefacts (D'Adderio 2010) or rules of thumb (Norman 1993). This study conceived of the non-material as equally capable of bearing on action as the material (Latour 2005), and explored and exposed how non-material practices enable and constrain practice.

PT enables exploration of knowing how a task is performed

Practice theory can highlight different ways of knowing that affect how a practice is performed. Practices, in this study, are activities documented or referenced around the time of transfer. Because transfer would not ensue without these activities, these practices represent *know-how* in terms of how an activity is carried out or progressed (Schatzki 2005a). Nicolini (2009), for example, showed that telemedicine nurses were aware of the time of day that clients were likely to be home, and adjusted their scheduled calling practices around those assumptions. This kind of know-how demonstrates clinical competence in terms of knowing when to follow or not follow a rule, process or social norm. This study explored references in the transfer narratives that implied know-how in a given context.

PT facilitates exploration of the same practice across different sites

Practice theory facilitates exploration of a practice across time and space (Giddens 1984). Using Schatzki's (2005b) definition, a 'site', which would usually be thought of as an absolute space, such as a specific location, building or other place, is viewed as a type of context. 'Context', in this sense, is a fluid concept 'loosely understood as an arena or set of phenomena, which surrounds or immerses something and enjoys powers of determination with respect to it' (Schatzki 2005b, p. 468). In this study, contextual phenomena are those practices referred to in transfer documentation by RACF, ambulance and ED triage clinicians. Practice theory is suited to this study, as focus can be aligned with a specific practice despite it occurring across differing geographical locales and organisations. The ontology and theoretical perspectives informing this research are represented in Figure 3.1, below.

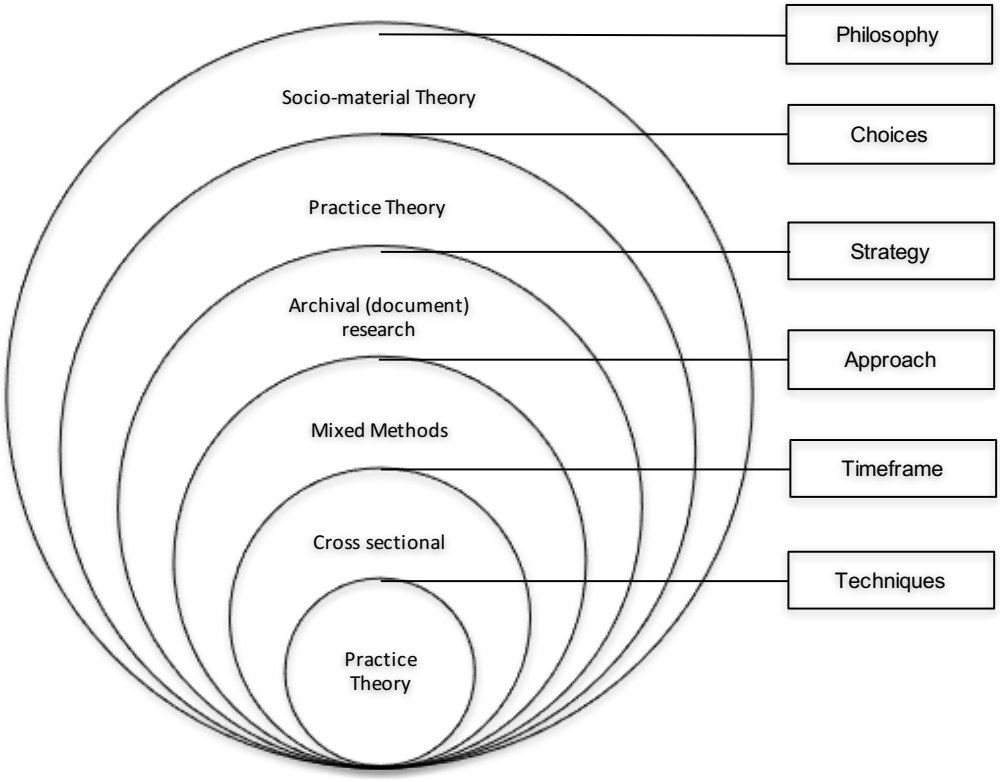

Figure 3.1: Layers of research

As previously identified, PT has a mixed heritage, and no one specific approach. As this study undertook an exploration of practices in the transfer of aged care residents from RACFs to EDs via ambulance, it arguably needed to make practices visible. The guiding framework is outlined in the following section.

Borrowing a toolkit logic

Nicolini states that 'practice is a multifaceted and multi-dimensional phenomenon' which therefore 'can only be approached through a tool-kit logic' using an integration of complementary theories (2009, p. 1395; 2012, p. 218). The pragmatic approach to inquiry in this study aligns with Nicolini, who, in reference to Latour, states that these complementary approaches, though separate, share a number of resemblances that enable the theories to be thought of as connected, albeit in a complicated way, 'without assuming they share one inherent common feature' (Nicolini 2012, p. 214). The modified toolkit used in this study is based on Nicolini's (2009) framework for 'zooming in' and 'zooming out'.

'Zooming' is an iterative process that takes advantage of alternating theoretical lenses tailored to the focus of the research (Nicolini 2012, p. 219). Zooming in on what is and is not acceptable in a practice enables a closer examination of the 'bounded-ness' of practices (Nicolini 2012, p. 225). This research recognises that no two transfers, or handovers across

services are identical. However, also acknowledged is that transfer is bound to the frameworks provided by organisations, and therefore clinical engagement with transfer is, at the same time, enabled and constrained by the conditions and accountabilities expected of clinical roles and functions relevant to the wider organisation. This directs attention at content determined necessary by actors, including what does and does not belong to a practice (Nicolini 2012). Another focus of zooming in is informed by Heideggerian theory, which enables practices to be thought of as oriented toward accomplishment and a sense of knowing what to do, whether that is to follow a rule or a moral intuition (Nicolini 2009). Zooming in necessarily draws out the writer's practical concerns, and the activities of work (Nicolini 2009). Further, it is possible to zoom in on discursive orders when the definition of 'text' broadly includes both the written material and that which frames it (Hardy 2004). And, when objects, or *things* are included in the toolkit, 'the performative role as well as the ways in which these artefacts establish relationships between practices' (Nicolini 2012, pp. 223,224) can be closely examined. The framework for zooming in and zooming out is outlined in Table 3.1, below.

Table 3.1: A framework for zooming in and out

Zooming In
• Role of material and non-material artefacts and tools • Sayings and doings in the text • Practical concerns in the text • Constructions of legitimacy
Zooming Out
• Associations between transfer and the wider practice nexus • Mediators of practice (rules, guidelines, expected performance) • Local 'site' effects

(Adapted from Nicolini 2012, p. 220, Table 9.1 A palette for zooming in, and Nicolini 2009, p. 1412, Table 3)

Practices, however, are never performed in isolation. Zooming out involves following the interconnections of practice, their relationships and wide-reaching associations (Nicolini 2009). Zooming out is not closeted from zooming in, as one is causally inseparable from the other. This study undertook a retrospective analysis of documents and documentation. While quantitative and qualitative methods are different, using both in the exploration of a problem from differing perspectives works to overcome some of the weaknesses of each. Zooming out and acknowledging the wider network of socio-material phenomena, and the relationship

with quantitative and qualitative results/findings, aids in developing new understandings of practice which implicate and explain why transfer information gaps endure. The methodological coherence of using mixed methods in this study is schematically represented in Figure 3.2, below.

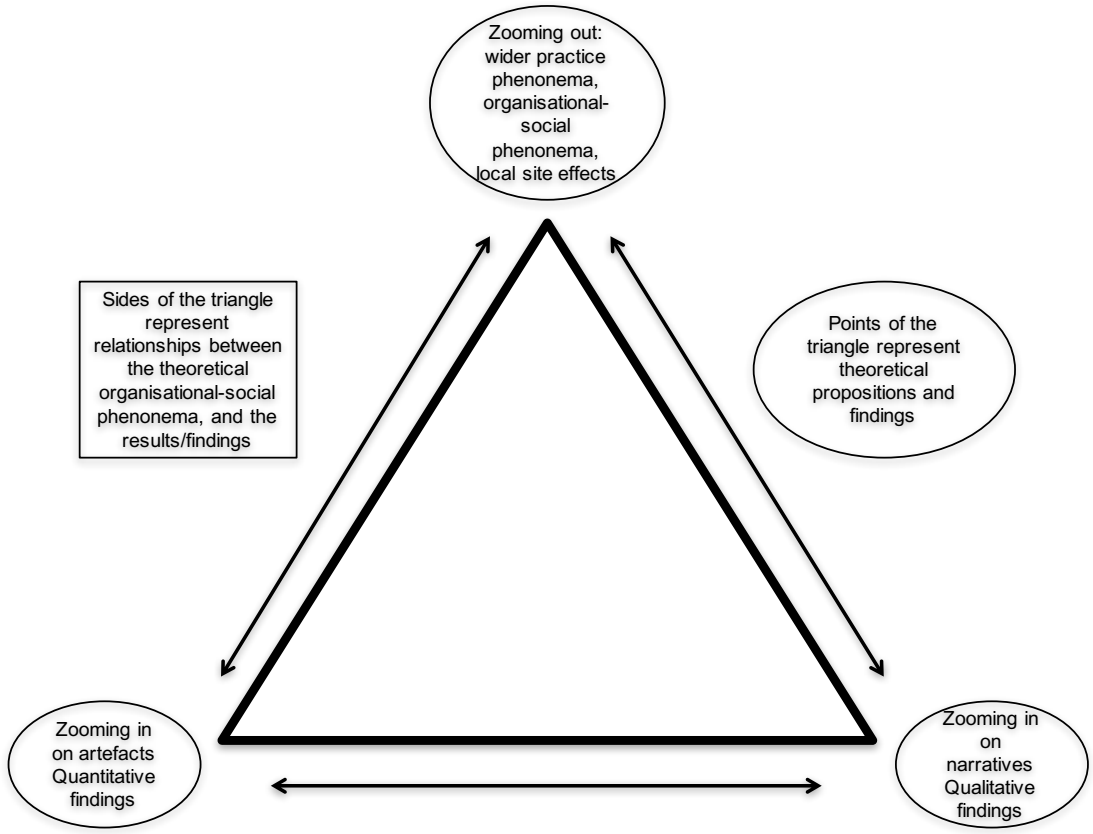

Figure 3.2: Methodological model of coherence

Adapted from Erzberger, C, & Kelle, U, 'Making Inferences in Mixed Methods: The Rules of Integration', in A Tashakkori and C Teddlie (eds) *Handbook of Mixed Methods in Social and Behavioural Research*, 2003, Sage Publications, Thousand Oaks.

3.3 Research approach

This section describes ethical considerations, self-reflexivity, and issues of mixed method design. Considerable ethical and legal obligations are required prior to, and during, the conduct of any research. Drawing attention to consciousness of the researcher's prior experience and understanding, reflexivity describes self-awareness strategies that can minimise the researcher's potential to inadvertently affect the data. Conceptually, mixed method studies appear straightforward. However, issues such as prioritisation or weighting of method, sequence, and integration need to be planned before a study is begun. In

addition, this section outlines the strengths and limitations of mixed methods relevant to this study.

Ethics

Prior to commencement, and adhering to the National Ethics Application Format (NEAF), this study was submitted to and approved by the Tasmanian Health and Medical Human Research Ethics Committee (Ethics Reference: H0013669), constituting clearance by the Health and Medical Human Research Ethics Committee in compliance with the Australian National Statement on Ethical Conduct (2007) (NHMRC 2015). Following application to access the digital medical records (DMRs) of patients transferred to the Royal Hobart Hospital (RHH), further approval was granted from the RHH Clinical Classification and Information Manager. Electronic data were de-identified and stored using password-protected computer software provided by the University of Tasmania. Data turned into hard-copy as tables and charts, etc. is stored in a locked filing cabinet in a locked room in a UTAS research centre. These data will be destroyed according to NHMRC guidelines.

Positioning myself as researcher

My journey of reflexivity began at the point when I recognised a problem in my workplace and wondered how to research it. I am a registered nurse (RN). In my role as an emergency RN, I work closely with paramedics and perform triage and handover. Researching others who handover and/or perform triage, particularly in my own workplace, implies that I am essentially a participant in my own research (Finaly 2008). In the early stages of my career, I also worked casually in aged care. This position naturally raises questions about how I might manage the tensions of having insider knowledge, and biases derived from that knowledge.

Finaly (2008) explains how reflexivity can help by drawing on the philosophies of Heidegger (1962) and Gadamer (1975, 1976). Finaly, interpreting Heidegger, states that every person, if exposed to the same phenomenon, will experience it in a different way, depending on their own past experience, and specific understandings (Finaly 2008; Hernandez 2014). To be reflexive thus implies an acknowledgement of that prior understanding/knowledge (fore-understanding), resisting the temptation to take any prior knowledge/understanding at face value, and making a deliberate interpretation and revision of the prior understanding/knowledge (Finaly 2008). According to Finaly's interpretation of Gadamer (1975), the researcher must challenge their prior knowledge/understanding with 'self-critique and an ongoing reflection on those prior assumptions that were built into the fore-

understanding' (Finaly 2008, p. 107). To aid my own reflection and self-critique, I began to make journal entries on commencement of this study.

During the journaling process, I found my inner voice was not dissimilar from the many other ED nurses I conversed with, who perceived RACF nurses as, on the whole, accountable for information gaps that may have a negative impact for RACF residents transferred to EDs. In the beginning, my inner ED nurse presumed this would ultimately be my finding, however, as a researcher I wanted to avoid pre-conceived biases and remain open to answers based on evidence. Awareness of this researcher–clinician dichotomy continued to be drawn out in the process of making journal entries. In these, I reflected on my preconceptions, why I had them, and the knowledge that informed them. I also reflected on how those presuppositions might prevent me from observing points of difference, or colour the way I saw them. Writing journal entries helped me to acknowledge my preconceived assumptions, while reflection and self-critique enabled the research to remain focused (Finaly 2008). However, insider knowledge was also of benefit to the research process. My interpretations of discourse and reference in the text were aided by my insider knowledge of practice at the clinical level (Bjorkeng, Clegg & Pitsis 2009).

Mixed methods

Mixing methods in research has increased in prevalence over the last 20 to 25 years. The term 'mixed methods' refers to two or more methods utilised in a research project that returns quantitative and qualitative data (Hall 2012; Johnson & Onwuegbuzie 2004). The goal of mixing methods is to combine research strengths in a complementary approach in order to minimise weaknesses in a single research approach (Cresswell & Plano Clark 2011; Johnson & Onwuegbuzie 2004).

Despite the apparent advantages that method mixing offers, numerous authors agree that the mixed methods approach is complex (Cresswell & Plano Clark 2011; Evans, Coon & Ume 2011; Johnson & Onwuegbuzie 2004). This is in part due to the potential for mixing to occur at numerous stages, and because the researcher must undertake two well designed studies within the one research project. However, the strength of using mixed methods is its potential to provide robust and complementary data, implying a similarly robust and complementary analysis (Cresswell & Plano Clark 2011). The two most prominent drawbacks to mixing methods is that it is resource- and time-intensive, and that decisions such as when and how data will be mixed, and how the data will be weighted, must be made prior to the studies' commencement. The numerous strengths and limitations of mixing methods are listed in Table 3.2, below.

Table 3.2: Strengths and limitations of mixed method research

Strengths	**Limitations**
• Symbolism in terms of pictures and narratives can be used to add meaning to quantitative data • Numerical data can overcome the problem of generalisation(s) by demonstrating precision to narratives and pictures • The strengths of qualitative and quantitative results can be combined • A sequential approach can be used to inform ensuing stages • The combination of qualitative and quantitative results can provide stronger evidence and informed conclusions through corroboration	• Time-consuming • Expensive • Potentially challenging for a single researcher to carry out • Requires knowledge and understanding of both quantitative and qualitative methodology – and may require the resources of a team • Methodological stages of mixing the data need to be determined

(Adapted from Cresswell & Plano Clark 2011; Johnson & Onwuegebuzie 2004)

The strengths of this study are that the quantitative and qualitative results can be synthesised in discussion, enabling overall stronger evidence-based conclusions to be drawn. Though time-consuming for a single researcher, the limitations of a mixed method strategy were ameliorated by an excellent supervisory team and the benefits that mixing enabled.

The mixed method strategy

Quantitative and qualitative approaches to research generally address distinct aims (Cresswell & Plano Clark 2011). Typically, quantitative strands capture a representative sample of the study population, enabling deductive inferences to be drawn. Qualitative strands are characterised by induction, exploration and the generation of theory (Johnson & Onwuegbuzie 2004). Designing a mixed method strategy involves making several key decisions that determine how the quantitative and qualitative strands of a study will interact (Cresswell & Plano Clark 2011). Strategies that must be decided are: (1) the level of interaction, (2) the priority, or weighting of the findings, (3) the timing, and (4) the mixing of the strands (Cresswell & Plano Clark 2011, p. 64).

The level of interaction is 'the extent to which the two strands are kept independent or interact with each other'. In this study, quantitative and qualitative data were collected simultaneously, but analysed independently. Keeping the data and analysis separate allowed results/findings relevant to quantitative and qualitative research questions to remain distinct (Cresswell & Plano Clark 2011, p. 64).

The priority or weighting 'refers to the relative importance […] of the quantitative and qualitative methods for answering the study's questions'. Quantitative may be prioritised over qualitative, or vice versa. Alternatively, the two methods may be prioritised equally (Cresswell & Plano Clark 2011, p. 65). In this study, equal priority was attributed to each strand to reflect the neutrality ascribed to either in answering the research questions.

The timing is 'discussed in relation to the time the datasets are collected […] and to the order the researcher uses the results from the two sets of data' (Cresswell & Plano Clark 2011, p. 65). Data collection in this study was, in the end, multiphase. The initial concurrent data collection resulted in a lack of a particular quantitative dataset that required follow-up in a second data collection phase. Data analysis was sequential. Although quantitative analysis preceded qualitative, the results did not inform the qualitative analysis.

The mixing of the strands 'is the explicit interrelating of the study's quantitative and qualitative strands… [often] referred to as combining and integrating.' Mixing may occur during interpretation, data analysis, or data collection, or at the level of design (Cresswell & Plano Clark 2011, p. 66). In this study, quantitative and qualitative data were brought together in the discussion. Bringing the data together at the discussion stage of the research maximised the level of interpretation, and thereby optimised the study's capacity to address the research aim (Onwuegbuzie & Leech 2006).

3.4 Linking methodology and method

Pragmatism proposes that 'thought should be seen as a product of continual hermeneutic interaction with the environment, essentially, as 'action'' (Buch & Elkjaer 2015, p. 3). Pragmatism is therefore not without dissimilarity from PT, as it implies that all situations are connected through structures such as tasks, goals, beliefs, language, practical know-how, social institutions, and other entities which simultaneously and recursively mediate action, embody experience and activate inquiry, making up an altogether interconnected field or nexus of practice (Buch & Elkjaer 2015; Schatzki, Knorr Cetina & von Savigny 2001). The continuous give-and-take between elements of the *field* (own emphasis) can therefore be

interpreted as a transactive or shared account between the social and natural worlds (Buch & Elkjaer 2015).

Individual structures forming entities of the practice field can only be interpreted through an analysis lens inclusive of the wider, integrative field. Actions, for example, are rooted in practices (e.g. knowledge of hanging a picture requires know-how of finding the wall-stud, an understanding of picture height, angling the nail, knowing how to hammer, and the prevailing viewer preference). And language as activity (in the context of site and clinical role) is an acknowledgement of dialogical practice phenomena which cannot be interpreted without considering the organisational institution or the effect that organisational structures produce (Schatzki, Knorr Cetina & von Savigny 2001). Reducing integrated practices to core individual components, thus separating them into discursive components of the nexus, means that actions can be analysed as an arrangement of parts. Drawing the findings of analyses together, by switching back and forth in discussion between the nexus as a whole and of parts, generates a holistic understanding of practice configurations that produce, re-produce, enable and constrain information (Latour 2005).

The practice approach in this research can be described as analyses that develop an account of materially entwined practice organised around shared understandings of transfer from RACF to ED via ambulance. The practice approach is schematically represented in Figure 3.3, below.

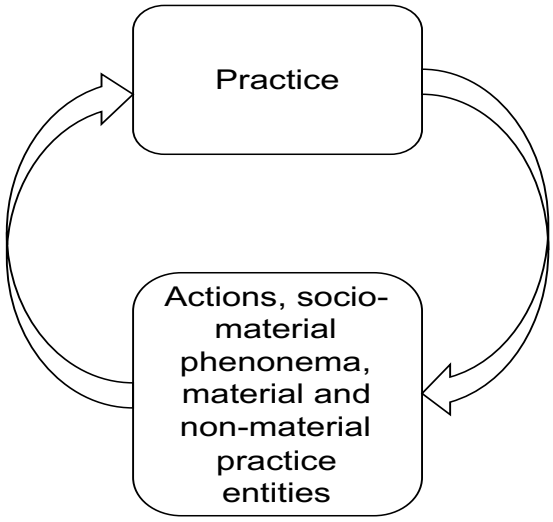

Figure 3.3: Practice Theory and research areas of interest

(Adapted from Buch and Enkjaeker 2015, p. 2)

Quantitative inquiry

Examining documents and non-material artefacts is instructive, because the arrangement of information is an indicator of the respective purposes, and boundaries, of different organisational sites. Documents occupy a central place in inter-facility, cross-disciplinary information transfer and knowledge sharing. This implies that rather than being inert artefacts, documents are records that inform future readers. The information communicated includes a wide range of issues such as patient demographic, health information, health plan, prior care, investigations/treatments, insurance, and finance concerns, each of which must be re-interpreted each time they are read anew (Prior 2003). Non-material tools in this study, the mnemonics, share a similarly central role in health care by structuring written material with a pre-determined and expected order of content (Blom et al. 2015; Haig, Sutton & Whittington 2006). Further, the structure and content of documents mediate interaction across time and space through enrolment and recording of different types of information for specific purposes (i.e. stimulus for interaction, warrants to be actioned, records of action, administrative action, action audit) any time the information is read and interpreted (Giddens 1984; Prior 2003).

In reference to how artefacts mediate practice, Nicolini states that ‘there’s a script embedded in design’ (Nicolini 2009, p. 1406). The inference is that artefacts (material and non-material) shape human practice (Orlikowski 2007; Schatzki 2005a). Artefacts are also the property of sites, and the complexities of sites shape actors’ know-how (their practical understandings), and hence the actioning of practice(s) (Lloyd 2010). Therefore, the link between artefacts and practice is one that is continually recursive. One method of examining artefacts is to identify document structure, content, and the frequency of content with the intention of describing and developing theory about relationships between document structure and documentation practice arrangements. Coupled with historical background, this information generates important archetypal representations of the priorities of organisations and of practices that endure.

This study asks descriptive questions of transfer documents and mnemonics that quantify one or more variables (Onwuegbuzie & Leech 2006). Quantitative method is appropriate to zoom in on, with specific focus on structure and information content of documents to answer the following sub-questions:

- What common documentation tools are used in RACF-to-ED transfer via ambulance in Southern Tasmania, and are the transfer tools standardised?
- Is the structure of written transfer information standardised?

- What standard subsets of transfer information are illustrated when a commonly accepted and recommended mnemonic (SBAR) is applied to the written free-text narrative?
- Who authors transfer documentation?

Qualitative inquiry

Socio-performance practice phenomena are equally central to understanding cross-disciplinary information and knowledge sharing. Socio-performance practices underlie actors' pre-conceptions, experience, lenses of interpretation, accepted practice, and know-how. Consequently, research focusing on making these phenomena visible contributes valuable insights about contextual and referential transfer practices. For example, direct communication between RACF and ED pre-transfer is uncommon. Most RACF transfers are reliant on ambulance services to communicate verbal and hard-copy transfer information on their behalf. Recent review of the literature suggests that information from RACFs is incomplete or entirely absent, and that little research has been inclusive of ambulance services in RACF-to-ED transfer (see Chapter 2). As yet, socio-contextual performance practice phenomena, such as the value receiving clinicians ascribe to information across transfer, and when information is re-interpreted and referenced in new, specialty-specific organisational documents is poorly understood. An obvious method of investigating and generating new information to account for this critical dialogue is to explore the transfer narratives across all services involved in transfer, as well as other formerly overlooked inclusions of practice performance references in the documentation.

In summary, the capacity for individual practice entities to influence integrative practice can be made visible and offer significant value to the generation of knowledge aiming to develop a better understanding of why information gaps persist for RACF residents transferred to ED via ambulance. A holistic, logical discussion must be inclusive of data drawn from mixed method, qualitative and quantitative inquiry. Linking the actions that this study determined to investigate using PT with mixed methods is schematically represented in Figure 3.4, below.

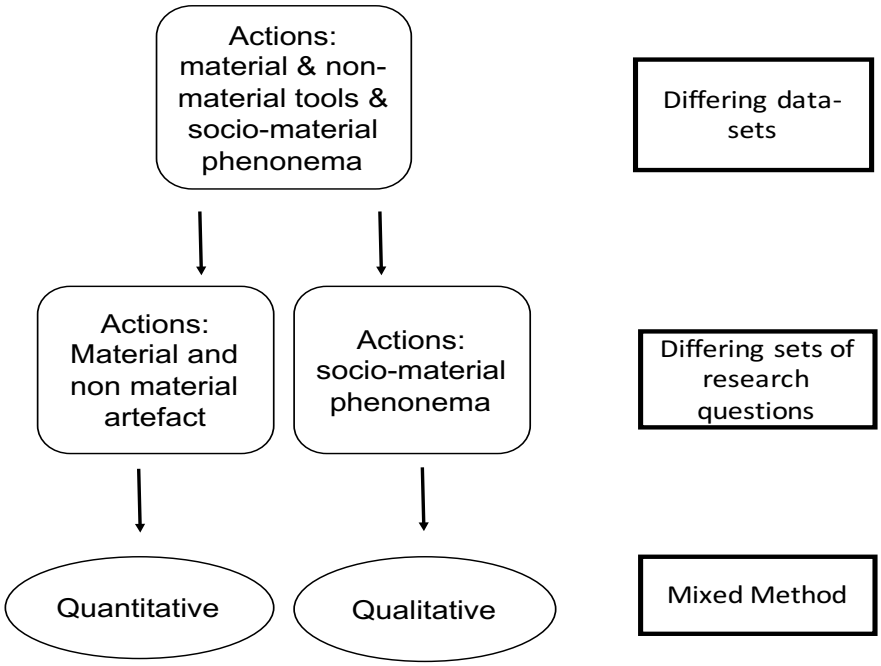

Figure 3.4: Linking Practice Theory to mixed methods

3.5 Method: Study design

There are six typical designs for mixed method studies. These are the convergent parallel design, the explanatory sequential design, the exploratory sequential design, the embedded design, the transformative and the multiphase design (Cresswell & Plano Clark 2011). Transfer of RACF residents to EDs via ambulance involves a nexus of practices that are demonstrable in documentation in both quantitative and qualitative ways (Schatzki, Knorr Cetina & von Savigny 2001). Therefore, the most appropriate way to capture data to answer the research questions requires both quantitative and qualitative methods; to focus on one without the other would provide an incomplete representation of transfer practices. This study design is a variant of the convergent design, outlined in Figure 3.5, below (Cresswell & Plano Clark 2011).

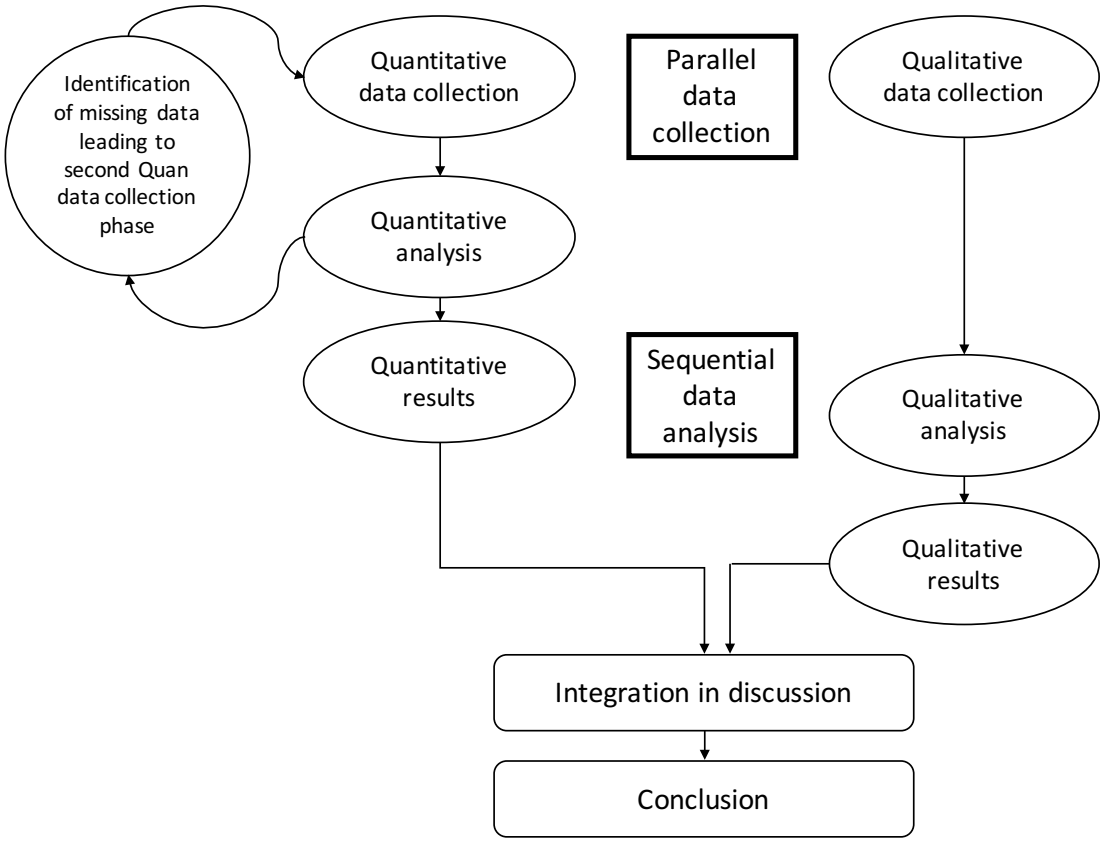

Figure 3.5: Convergent parallel variant mixed method study design

Quantitative and qualitative data were captured concurrently. It was necessary to collect both sets of data at the same time to facilitate discussion of both sets of results for the same transfers. Quantitative data, for example, the type of document and fields within a document, were used to identify organisational requirements and completeness of forms. One exception to this was data collection of the Yellow transfer-to-hospital Envelope (YE), which was not routinely scanned into the DMR and required a subsequent data collection phase. Qualitative references to practice within the documents collected in the first round of data collection provided a social perspective on practice in the carrying out of transfer. Data were analysed separately in the quantitative and qualitative research strategies. The results were brought together during the discussion phase.

Data sampling

This study aimed to identify practice contributing to the durability of information gaps in the transfer of residents from RACF to ED via ambulance. The data of interest in this study are the transfer documents and information generated and sent with and on behalf of residents transferred from RACF to ED via ambulance. The phenomena of interest are socio-contextual practices represented within transfer documentation authored by each of the

groups of interest (RACF, ambulance and ED triage). The experiences of elderly persons living in RACF were not themselves the main focus, nor were health professionals at an individual level.

Sampling methods differ in quantitative and qualitative research approaches (Polit & Beck 2017). Quantitative approaches apply sampling strategies that will enhance generalisability to a wider population. Qualitative sampling methods tend to select information-rich cases that can provide in-depth detail about a particular phenomenon of interest (Polit & Beck 2017). This mixed-method study used purposive sampling, applicable to quantitative and qualitative sampling, in which transfer documents and associated narratives from each of the groups of interest could be collected at the same time due to their 'nested relationship' (Polit & Beck 2017, p. 588). This study applied the same purposive criteria to the collection of YEs that were otherwise not accessible. Table 3.3, below, outlines criteria applied to RACF Transfer to ED via ambulance transfers to determine inclusion or exclusion from the study.

Table 3.3: Exclusion criteria

Age	<65 years
Level of care	Self-contained residential accommodation
Mode of transport to ED	Public transport Privately arranged family transport Community car
Triage category	Category 1 Category 2
Presentation	Direct admission to a ward

Location and time-period of the data extraction

This study was conducted in Tasmania, an island state located off the coast of south-eastern Australia (Victoria), separated from the mainland by Bass Strait. As of June 2013, the population of Tasmania was 513,200. During this period, 17.3 per cent (88,600) of the total population were aged 65 years and over (Australian Bureau of Statistics 2013). Tasmania's largest tertiary referral and teaching hospital, the Royal Hobart Hospital, is located in the state's capital, in the south (Department of Health and Human Services n.d.-b). One publicly-funded ambulance organisation services the state (Tasmanian Audit Office 2016). Southern Tasmania, specifically the RHH, was selected as the study site of choice due to its population catchment, predicted rate of ambulance transfers, and accessibility to the

researcher. Data were collected in December and January to avoid potential over-representation in the data of influenza-like illnesses and gastroenteritis that occur mostly in winter and spring (Latta et al. 2018; Murdoch et al. 2014).

Quantitative documents and documentation

In the absence of a known total population, and where descriptive statistics will be used as the measure of analysis, quantitative sample size may be based on estimation (Israel 2003). In Tasmania, RACFs are divided among public, community, and privately-operated organisations. Most offer a range of care levels, including packaged homecare, on-site unit accommodation, transitional care, respite, low and high care, and specialised dementia services. As of 30 June 2015 there were 178 private, public and charitable RACFs listed in Tasmania. Eighty-one were listed as being in the south of the state (Department of Social Services 2015). At the time of this study, recording of RACF as origin, rather than of street address, and the recording of the level of care provided to the resident in the RACF on arrival to the ED was not uniformly undertaken. Therefore, it was not possible to ascertain an accurate number of resident transfers or residents fitting inclusion criteria transferred to ED within a given timeframe in order to accurately predict sample size. Drawing on discussion with the study hospital's Classification and Information Manager, it was estimated that up to 100 transfers from RACFs, with associated ambulance and ED triage documentation, would be enacted during the proposed data collection timeframe.

RACF transfer forms

In Tasmania, as with the whole of Australia, no mandated minimum dataset for transferring RACF residents to ED exists (Griffiths et al. 2014). However, introduction of a yellow transfer envelope (YE) to improve communication between RACFs and EDs was supported by the ACSQHC in 2007. One face of the envelope shows a checklist and a small allocation of space for free text. The YE's storage is used to house loose-leaf documentation during transit (Morphet et al. 2014). This study sought to examine the structure, format and content of the YEs used in Southern Tasmania (see Appendix 2, style 1), and to identify the types of document sent in transit from RACFs to the ED.

Ambulance Tasmania document

Ambulance Tasmania provides non-emergency transport and emergency ambulance care and transport services through its network of 53 rural, urban and remote ambulance stations. With some exclusions related to motor vehicle and workplace accidents, a non-billable service is provided to Tasmanian residents within the state and its islands (DHHS n.d.).

Ambulance Tasmania attends approximately 74,000 incidents per year, with an average 37,000 of these being in the south of the state. Staffing is comprised of combinations of salaried crews (66 per cent), mixed salaried and volunteer crews (30 per cent), and volunteer-only crews (4 per cent). Call-outs are managed through the state Communications Centre, dispatching services state-wide from its centre in Hobart (Department of Health and Human Services n.d.-a). Deployable vehicular resources are ambulances, first intervention vehicles, remote access and special operations vehicles, a rescue helicopter, and a Royal Flying Doctor fixed-wing aircraft fitted with medical retrieval equipment (Department of Health and Human Services n.d.-a).

Ambulance Tasmania utilises Victorian documentation software known as the Victorian Ambulance Clinical Information System (VACIS) to generate an electronic Patient Care Record (e-PCR), for every call-out attended (Ambulance Victoria 2012). At its simplest, the e-PCR consists of three components: a) the call-out event and descriptive record, b) the call-out event assessment and treatment record, and c) the call-out event billable information record. The formerly-standard C3-sized paper version of the Patient Care Record, which is functionally similar to the e-PCR, is still used by few non-VACIS integrated volunteer services, and in the event of VACIS downtime (i.e. system malfunction). This study examined the structure, format and content of the e-PCR and, where necessary, paper PCRs. A fictitious example showing the e-PCR format is reproduced in Appendix 5: VACIS test case sheet.

Emergency department triage document

The Royal Hobart Hospital (RHH) is the only tertiary referral hospital in southern Tasmania. Services are inclusive of, but not limited to, midwifery, neonates and paediatrics, surgical specialties, neurosurgery, cardiology, oncology, stroke, rehabilitation, psychiatric, and emergency care. The RHH is the principle referral and university teaching hospital for the state, with 550 beds, and an approximate catchment population of 240,000 people (Department of Health and Human Services 2015). The RHH provides a 24-hour, seven-day a week emergency department. At the time of this research, the ED had 41 treatment spaces, including four resuscitation bays, five paediatrics beds, and three spaces dedicated to mental health. It also had a 10-bed emergency medical short stay/observation unit. For the nine-month period ending 31 March 2015 there were 42,520 presentations to ED (Department of Health 2015). Triage is the first point of contact for patients attending the ED.

Triage data at the RHH were entered using Emergency Department Information Software (EDIS). When data entry into EDIS is finalised and the episode is printed, the information is

formatted onto one side of a double-sided, multi-use document (see Appendix 6). This study examined the structure, format and content of triage information on the EDIS software interface and EDIS hard-copy print-out.

Qualitative narratives

Qualitative sample size differs from quantitative sample size as the aim is to describe a phenomenon rather than its frequency or distribution (Liamputtong & Ezzy 2005). The primary goal of a purposively selected sample is to elicit rich detail about the phenomenon of interest (Liamputtong & Ezzy 2005; Polit & Beck 2017). However, the open-endedness of qualitative questions is influenced by the subjective nature of the researcher's interpretation of data (Mayer 2015). Therefore, it is challenging to calculate a figure that will provide a representative qualitative sample size. Qualitative sample sizes may be small, but they are generally considered large enough when the desired analysis can be supported having regard for the intent of the research (Liamputtong & Ezzy 2005). In this study, qualitative data samples were nested within the transfer tools and documentation sampled in the quantitative strand of the research (Polit & Beck 2017). Free-text narratives authored by RACF, ambulance and ED triage clinicians across the transfer journey, describing the transfer event, embedded within transfer documents, were collected and explored for socio-contextual references to practice.

Accessing the data

The RHH Digital Medical Record (DMR) system was chosen to enable ease of access and maximum exposure to data from each of the three groups of interest. Information systems used across health services in Tasmania vary. RACF information systems, too, are not standardised, resulting in significant variation between facilities (Yu et al. 2013). Although use of YEs created specifically for transfer of resident information between facilities is widely recommended (Belfrage et al. 2009), many RACF information transfer aids remain specific to the site of origin. RACF documents received following transit are retained by the RHH and scanned into the patient's DMR. VACIS is used by the ambulance service to generate an e-PCR, which is a legal record of the patient's personal information specific to the call-out event (Lang 2012). Although not documented, internal specification and professional courtesy requires that the e-PCR is printed in hard-copy so that it can be retained and referred to after transfer (Ambulance Tasmania, Hobart Branch personal communication email; 26 September 2017). After printing, the e-PCR is stored with the patients hard-copy documentation. The EDIS interface, used to enter triage information for all ED presentations, is, after completion, printed in hard-copy and retained with the patient's hard-copy

documentation. All hard-copy documents are similarly scanned into the patient's DMR on conclusion of the hospitalisation episode. None of these documentation systems is electronically linked to the others prior to scanning into the DMR. However, all, once scanned and uploaded, are forthwith accessible via the state-wide DMR. Therefore, the DMR was the most logical data access point for the study.

The RHH Classification and Information Manager was approached for assistance in identifying appropriate records in the DMR. According to the AIHW, residents entering permanent care in RACFs are aged 65 or over, and those entering for respite are generally older, around 80 years of age (AIHW 2012b). Review of the literature found that emergent to non-urgent triage categories (i.e. ATS categories 3, 4 and 5) are the most common categories for residents transferred from RACF to ED (Arendts, Dickson, et al. 2010; Briggs et al. 2013; Ingarfield et al. 2009). As categories 3, 4 and 5 are less time urgent than categories 1 and 2, it was also assumed that they would be more likely to have complete transfer records for each of the groups of interest. Data extraction eligibility criteria given to the Classification and Information Manager thus outlined the origin of transfer as RACF, aged greater than 65 years, with a triage categorisation of 3, 4 or 5.

Data sampling issues

A limitation of the study hospital's ED administration record system at the time of data collection restricted capture of RACF presentations to ED when a residential street address rather than a facility name was supplied. Fewer than the actual number of RACF to ED transfers may have been found as a potential outcome of this limitation. It was also not possible to scan the data to specify transfers undertaken via ambulance prior to accessing individual records. In due course, the National Emergency Access Target (NEAT) facilitation manager, under the RHH Classification and Information Manager's directive, was able to provide the Tasmanian Health Clinical Identifiers (THCI) of 89 potentially eligible transfer cases to the researcher, identified from a cross-sectional two-month calendar period from December 2013 to January 2014. Data extraction and review revealed that nine cases did not meet the inclusion criteria. In addition, numerous sets of transfer documents were missing or incomplete. Forty-six RACF, 72 ambulance and 80 ED triage transfer cases were included in the final sample; 240 cross-facility transfer episodes and 199 verbatim free-text narratives. In addition, and also following the same inclusion/exclusion criteria as above, a separate data collection recruited the study hospital's ED nurses to collect, de-identify and photocopy YEs as residents arrived by ambulance at the ED. This separate sampling procedure was deemed necessary after finding that the YEs were not routinely scanned into

the DMR. Undertaken between 1 December 2014 and 31 January 2015, the outcome of this process was the collection of 48 YEs.

Data collection

The RHH Classification and Information Manager provided the researcher with a 'hot' desk space within the RHH coding office precinct. The researcher is an existing employee of the RHH, negating the need to obtain a guest login. All DMR records were accessed electronically from this site and/or from consultant office spaces within the ED subject to space availability. Data extraction was undertaken between February and July 2014. No patient names were collected, and, on completion of data extraction, THCI identifiers were deleted. In keeping with the convergent parallel study design, quantitative and qualitative data were collected at the same time from the DMR by accessing records for each of the initial 89 patients identified through their THCI (Cresswell & Plano Clark 2011). However, for ease of discussion, the pilot study, quantitative and qualitative data collection strands are discussed separately, below.

The pilot study

A pilot study is a widely accepted method of trialling a research instrument (Polit, Beck & Hungler 2001). Researchers vary as to an acceptable pilot sample size, with recommendations ranging from 10 to 20 per cent of the actual study size (Baker 1999). In this study, eight patient DMRs (about 10 per cent) were accessed using an Excel-formatted tool to pre-test the data extraction item tool prior to the main study. After discussion with the researcher's supervisors, four main issues were identified. First, a similarity in the wording of several questions was eliciting the same response. Second, copies of the YE did not appear to be being scanned into residents' DMRs. Third, the inadequacy of Excel as the main data management software was identified. Lastly, the time allocated to extracting data from the DMR was found to be vastly inadequate. These outcomes led to deletions of repetitive questions, preparations to collect YE data in a separate phase of the study, and a change to SPSS version 21 as the primary data management software.

Representativeness of the data

The data collectively represented a mixture of low and high care (inclusive of specialised dementia care) RACF residents from various facilities located in southern Tasmania. Some RACFs transferred residents more frequently in the data collection period than others. In total, transfer data were collected from 26 RACFs. Twenty-one were privately owned, three were community-run, and two were publicly owned and operated. The majority of transfers

with identifiable levels of care were for residents living in high care accommodation (29) compared to low care (three), and respite accommodation (two). The level of care for residents could not be determined in 46 individual cases due to incompleteness of documents, and/or lack of data. Most RACFs transferring residents fell within a 10-kilometre radius of the study hospital's emergency department. Few transfers were received from RACF from farther than 25 kilometres away. Figure 3.6, below, depicts the distances from the RACFs to the ED.

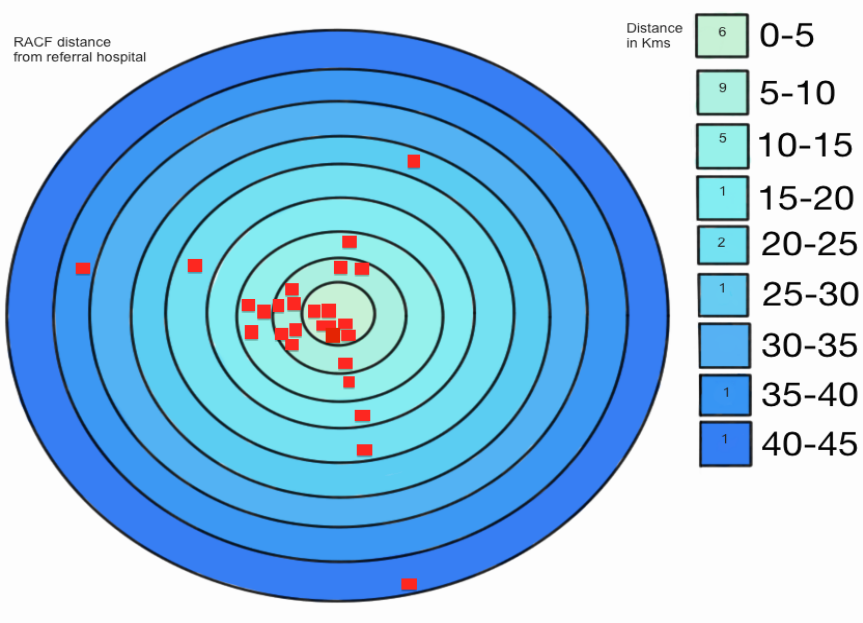

Figure 3.6: Distance from RACFs to ED

The mean age of residents transferred via ambulance to the ED from RACFs was 84.6 years. Thirty-one per cent of the residents were male and 69 per cent were female. In keeping with previous findings, over half (59 per cent) of the residents transferred to ED in this study were triaged as category three (Gafforini & Carson 2013; Ingarfield et al. 2009). Data from 2010–11 indicate that more than 30 per cent of the population living in RACFs are in high care accommodation, are aged 85 or over, and are female (AIHW 2012a). Therefore, data collected in this study are representative of the overall Australian RACF population.

The Yellow Envelope

Yellow Envelope data were collected separately. The study hospital's ED nurses were recruited to photocopy YEs on the arrival of RACF residents at the ED, and to return the originals to the patient's notes immediately afterward. Photocopies of 48 YEs were collected during the data collection period. After removal of 10 duplicates, 38 YEs were included in the study. The organisation Primary Health Tasmania (then known as Tasmanian Medicare

Local) supplied the official version of the YE (Type 1) to RACF facilities across the state. Two other versions were identified. One side of each YE type was headed 'Transfer-to-hospital'. Under this heading were printed prompts for the inclusion of transfer data. Different datasets were printed on each of the three YEs. The pre-printed data prompts for each of the YEs are listed in Table 3.4, below.

Table 3.4: Pre-defined categories by Yellow Envelope

Check-list inclusions	Type 1 (official)	Type 2	Type 3
Patient name	**	*	**
Service provider	**		**
Transfer date	**		
Hospital notified of transfer	**	**	
GP details	**	*	
RACF staff contact	**		
Pharmacy details		*	
Level of care	**		*
Letter of transfer	*	*	
Medication chart	*	*	
Premorbid functioning		*	
Relevant medical history		*	
Allergy list	*	*	
Copy of most recent medical assessment		*	
Medications sent	*		
Copy of most recent investigations		*	
Transfer form/personal plan	*	*	
Copy of current vital signs, Blood sugar, bowel chart		*	
Goals of care plan	*		
Contact & personal information sheet	*		
Pension/health insurance no.		*	
GP letter/GP informed of transfer	*	*	
Advanced Care Plan	*	*	*
Person responsible	**	*	
NOK notification and contact	**	*	
Allergy specified	**		
Falls risk	**		
Cognitive state	**	*	
Oxygen requirments	**		
Alarms (wandering)	**		
Return transport advice	**		
Other	**		**

** Denotes identified on the surface of the YE * denotes information to be enclosed

RACF hard-copy documents

The types of information sent in hard-copy from RACFs were identified and counted. RACF information documents ranged from one to 20 pages in length. Where an individual document spanned three pages (i.e. a medication chart), the item was counted only once (i.e. as a single page). Ambulance document sets ranged between one and three pages in

length. Emergency document sets were all one page long. The total number of individual documents encompassing document sets was not counted.

e-PCR and EDIS document

Seventy-two e-PCR and 80 EDIS triage documents were collected. Images of the e-PCR electronic interface, and an image of the formatted e-PCR print-out (with fictitious case information) were obtained from Ambulance Tasmania. The example e-PCR differs slightly from the versions found in this study. A reproduction is provided in Appendix 7. A copy of the formatted EDIS hard-copy print-out was also collected (see Appendix 6).

Non-material artefacts: Mnemonics

Review of the literature showed that the most common mnemonic used for handover of patient information in health care, inclusive of its variations, is SBAR (Bonacum 2008; Riesenberg, Leitzsch & Little 2009; Stewart & Hand 2017). The free-text transfer narratives from each group of interest were searched for standardised content using components of SBAR. The primary SBAR elements documented by each group of interest are shown in Figure 3.7, below.

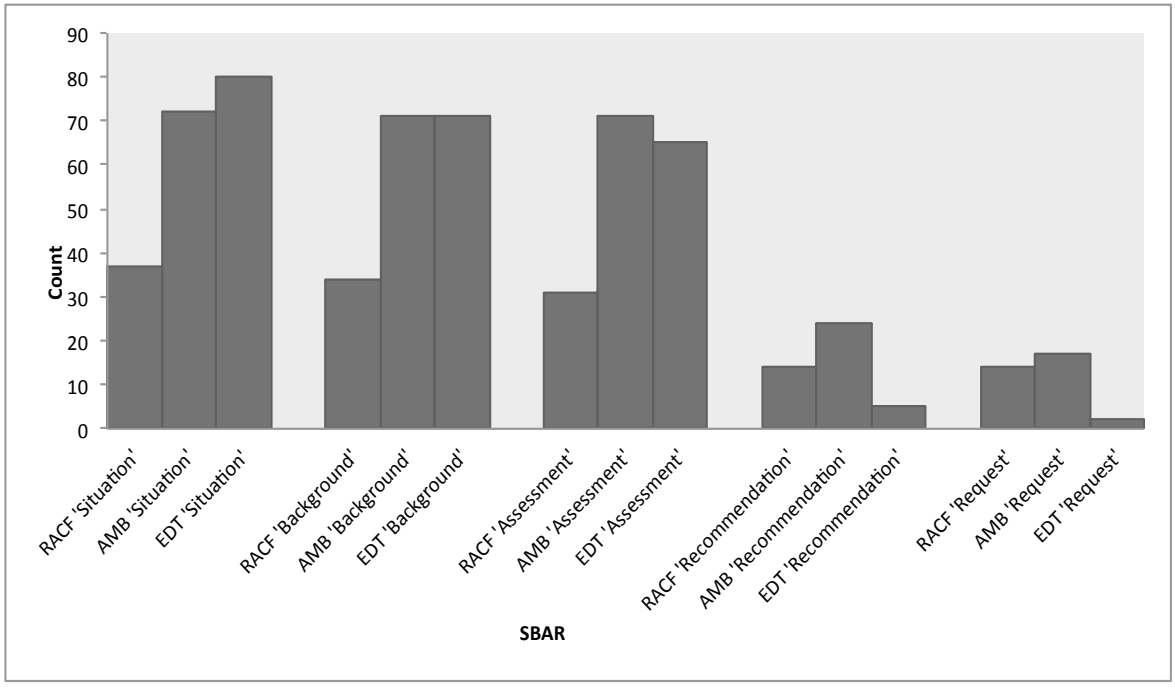

Figure 3.7: Mnemonic use in transfer by organisation

3.6 Quantitative and qualitative data analysis

A phenomenon cannot be interpreted and understood independently of other phenomena (Orlikowski 2007; Schatzki, Knorr Cetina & von Savigny 2001). The analytical approach of this study is informed by quantitative inquiry based on a set of research questions that aim to enable measurement and generalisation (Polit & Beck 2017), and through inductive logic informed by Schatzki's (2001, 2005) PT and site ontology, which enable exploration of emergent themes relevant to the aim of the study. Though undertaken separately, neither quantitative nor qualitative data analysis is prioritised over the other. Rather, the findings of each are a culmination of Nicolini's (2009) PT framework for zooming in, interpreted, in turn, in discussion alongside an understanding of system realties more broadly, made possible by zooming out. This section briefly outlines qualitative and quantitative data analysis before concluding with the study's strengths and limitations.

Quantitative data analysis

Eighty transfer episodes were coded during the data extraction period. Coding is the transformation of data into numbers (or symbols) to facilitate precision and consistent management (Polit & Beck 2017). A single researcher experienced in emergency nursing and triage extracted and coded the data in this study. Data were coded into nominal, ordinal and scale (interval) variables, and entered directly into the IBM Statistical Software SPSS version 21. SPSS (v21) is a piece of software used to analyse large, complex datasets (Field 2013). The SPSS platform was selected for its ease of use and integration with other data analysis platforms (IBM 2012). Table 3.5, below, provides an example of the coding frame.

Table 3.5: RACF identification of the problem or reason for transfer

Nickname	Label	Other info	Value
RFTrans	Reason for transfer identified by the RACF	999 (identifier missing) 1 = yes 2 = No	Ordinal

Descriptive statistics were used to summarise and show the extent of document differentiation used across transfer in a meaningful way, and to enable generalisations and inferences to be drawn specific to each group of interest (Onwuegbuzie, Johnson & Collins 2009). A simple document count was performed to discern the type and frequency of RACF documents available in the DMR, and to discern the type of YE and the frequency with which items appeared on its checklists. Frequency tables were used to identify occurrences. Multiple regression enabled analysis of predictor variables such as reason for presentation, triage category and length of stay (Field 2013).

Non-material transfer artefacts

SBAR was chosen as the framework for examining contextual word use and phrases in written transfer narratives (Hsieh & Shannon 2005). SBAR is an appropriate measure of comprehensiveness, because it is purportedly used across a variety of clinical settings, including inter-facility transfer (ACSQHC 2012b). The appeal of SBAR is that its main components are consistently structured while at the same time relatively universal. It should be noted, however, that the ACSQHC (2012b) does not identify one mnemonic preferentially over another.

Operational features of the SBAR mnemonic needed to be easily identifiable. The Standard Key Principles for Clinical Handover using SBAR variants and SBAR communication tables were amalgamated to achieve this (Dingley et al. 2008; NSW Health 2009; Tews, Liu & Treat 2012). The main components of SBAR can hence be described as broad umbrella headings that frame consistency, while the content of information subsumed under each of the elements S, B, A and R can be tailored to fit specific requirements and purposes. Data were extracted from the written transfer narratives through application of the SBAR coding frame and then numerically quantified. Defining elements of the mnemonic are outlined in Table 3.6, below.

Table 3.6: SBAR mnemonic and sub-elements

Mnemonic	Definition of element
Situation	Current problem Reason for referral Concerns articulated Identification of urgency
Background	Clinical background or context History of the current problem Relevant medical/surgical or social history Synopsis of previous treatment
Assessment	Current vital signs or observations What you think is possibly wrong What you have done so far
Recommendation	For referral to others For a management plan Specific request

(Adapted from: NSW Health 2009; Dingley et al. 2008; Tews et al. 2012)

Content analysis was applied to each written transfer narrative to quantify context. Frequency tables were used to collate the identified elements of SBAR for each group. The crosstabs feature of SPSS (v21) enabled cross-group comparison of the operational units of

SBAR. A test/re-test format was applied to re-check coding of the data by the same researcher four months after the initial process. Intra-rater reliability was substantial (Interclass Correlation Coefficient 0.89 – 0.97), with a lower bound average measure agreement of 82 to 94 per cent.

Qualitative data analysis

The qualitative strand of this study addresses previous omissions of practice in the literature. Transfer narratives were transcribed verbatim from the DMR for each of the three groups and entered directly into SPSS (v21). The researcher kept the abbreviated nuances particular to each narrative. For example, where the word 'patient' was abbreviated to 'Pat', 'PT' or 'pt', or 'right upper quadrant' to 'RUQ' the abbreviation was left intact. The narratives were exported from SPSS (v21) to the computer-assisted qualitative data analysis software program MAXQDA. MAXQDA is a data analysis program. Its latest iteration (MAXQDA 18) fully supports qualitative, quantitative and mixed method research. At the time of this research, MAXQDA 12 enabled qualitative and quantitative text analysis, but descriptive and inferential statistics were not enabled on the platform until 2016. MAXQDA 12 facilitates the importation and analysis of multiple data sources, such as direct input, video, photographs, Internet pages, PDF documents, Tweets, and Excel and SPSS datasets (GmbH n.d.).

Because dispersed and integrative practices overlap (Schatzki, Knorr Cetina & von Savigny 2001), practices of transfer were not identified as one or the other, but were instead thematised according to the type of function or performative action using relevant gerunds (Miles, Huberman & Saldana 2014). Gerunds are doing words or expressions of action that signify practices (Bjorkeng, Clegg & Pitsis 2009; Miles, Huberman & Saldana 2014). Given the recent literature focus on the appropriateness of RACF Transfer to ED, concepts of validity were also considered (Finn et al. 2006; Morphet et al. 2015). Mutual agreement is an inference of practice that can be made visible by identifying common ground. Common ground is a concept defined as a 'sum of mutual knowledge, beliefs, and suppositions', which 'enables agents to recognise and represent the general information about the world as well as about previous states and current situations that is shared among them' (Clarke 1996, p. 93 cited in Raczaszek-Leonardi, Debska & Sochanowicz 2014, p. 4). 'The most important feature of common ground is mutuality' (Raczaszek-Leonardi, Debska & Sochanowicz 2014).

In addition, expressions of action may signify validity and legitimacy through critically reflective argumentation (Geiger 2009). Critical reflection can alter or remove obvious reference points in transfer text from the mutually acceptable, and can offer the reader

greater detail. Geiger describes exploration of text using concepts drawn from Toulmin (1958) (Geiger 2009). Geiger (2010, pp. 294–295), discussing Toulmin (1958), states that 'an argument can generally be divided into six distinct parts: claim (conclusion), grounds and data (supporting evidence, data and facts), warrant (inference rule), backing (convention principle), qualifier (degree of confidence) and rebuttal (unless, until)'.

Practice theory can highlight different ways of knowing that affect how a practice is undertaken or progressed (Schatzki 2005a). Nicolini (2009) demonstrated that telemedicine nurses altered their practice as their knowledge of a process developed. The nurses demonstrated clinical competence in terms of knowing when to follow or not follow a rule, process or social norm when they altered their call schedules and justified their authority to do so by rationalising the change by reference to time savings and increased patient satisfaction (see Section 3.2: Practice Theory). This study explored reference practices in the transfer narratives that implied know-how in the context of transfer.

The concept of legitimacy is a useful starting point to answer what normative transfer practices are, and why a rule, norm or process is followed or not. According to Van Leeuwen (2007), there are four categories in which text-based legitimation are found. These are:

(1) Authorisation, described as: '… because I say so', where the 'I' is someone in whom some kind of authority is vested, or 'because so-and-so says so', where the authority is vested in 'so-and-so' (Van Leeuwen 2007, p. 94)

(2) Moral evaluation – which is an evaluation that hints at, but does not necessarily explicitly refer to moral values. Moral concepts can, however, be recognised 'on the basis of common-sense cultural knowledge', which is expressed throughout transfer documentation in several ways (Van Leeuwen 2007, p. 98). Van Leeuwen (2007) discusses three modes of drawing out moral practice using evaluation, abstraction and analogy. Practices which are evaluative tend to apply adjectives to a situation, and are then referenced against a relational action. Abstraction refers to practices which ascribe a quality that links the action to a moral value, i.e. using the ED resources for radiography is re-worked as 'working collaboratively'. And an analogy is defined as when a comparison is made that may have either positive or negative values depending on the socio-cultural context (Van Leeuwen 2007, p. 99).

Van Leeuwen's next category of legitimation is (3) rationalisation – distinguished into constructions of purpose (p. 101), and constructions of 'the way things are' (p. 103). And, lastly, (4) mythopoesis – where the function of storytelling engages readers to accept the social order as it is described and conformation to a practice is encouraged (p. 105).

All of these forms of legitimation can be written as prescriptive, 'thinly sprinkled' (p. 92), or entwined accounts of practice. They may feature the specific instance they serve to legitimate and dominate the text, or, conversely, they may become the focus of text and hardly refer to what is being legitimised at all (Van Leeuwen 2007).

Thematic analysis undertaken through applying practice gerund codes to the transfer narratives across service groups (Miles, Huberman & Saldana 2014), and use of MAXQDA 12 made it possible to diagram and visualise practice performance variants using case modelling. First, cycle codings were developed inductively from the narratives. After summarising the data in the first cycle, second cycle coding grouped patterns in the codings into smaller categories of meaningful units of data (Miles, Huberman & Saldana 2014). These pattern codes allowed for activities of practice to be clustered into basic categories.

Case modelling displays coded segments representing the practice web, depicting strong links with broad lines and weaker links with narrower lines. Visual representation assisted in drawing hypotheses about relationships between transfer episodes and practice performance. One-case models were broken down into individual case models for clearer analysis. Transfer narrations were interpreted in new ways, thus revealing new insights. Case modelling is schematically represented in Figure 3.8, below. Appendix 4 provides examples of case models generated in this study.

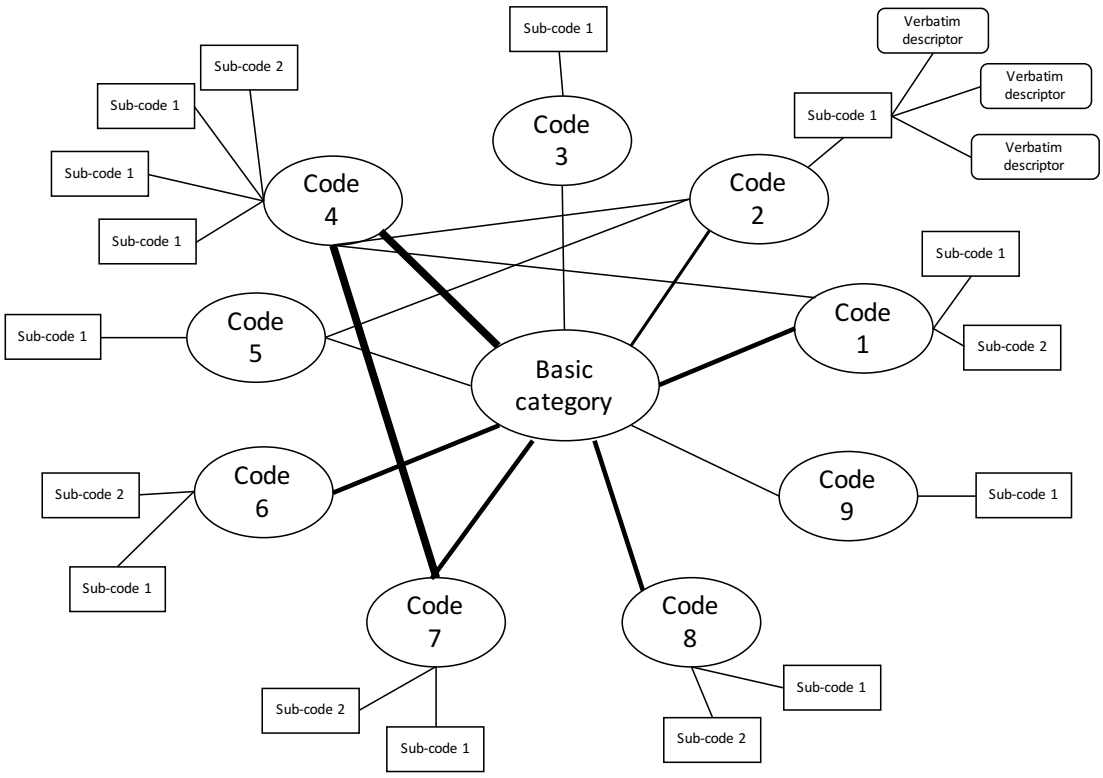

Figure 3.8: Case model schematic

Socio-material and socio-contextual performance practices are made into visual representations using case modelling. Recurrent practices of the groups of interest were highlighted with accompanying contextual transfer references drawn directly from the transfer narratives.

Data reduction and development of basic themes

Practices drawn from the narratives of each group were developed into 24 gerund codings. Each segment was read and re-read during this process. Memoranda were kept of ideas generated from the different foci, and references in narratives were checked and re-checked. The 24 codings and relevant sub-coding's were reduced to 11 pattern codes, which were further reduced to five basic categories. The research interest in the nexus of activities, offered as an account in the transfer narratives, were then developed into broader integrative practices. The development of codings into basic categories is outlined in Table 3.7, below. Further coding development tables are shown in Appendix 3.

Table 3.7: Developing the basic category: Forwarding the reasons for transfer

Codings	Pattern codes	Basic Categories
Describing: • Lead up to transfer event • Current condition Outlining: • Prior clinical management • Medical history Stating: • Clinical results • Vital signs • The problem or event • Assessment findings • Outcome of treatment	• Detailing evidence of the current situation • Detailing evidence of the immediate background • Detailing the current assessment	Forwarding the immediate reasons for transfer

The five basic categories were assembled into three organising themes on the basis of their referential content. The three organising themes were further interpreted into global themes. The overarching global themes exposed the reality of transfer practices at the clinical level. These global themes are: 1) Narratives must convey legitimacy, 2) Organisational boundaries are specific, and 3) Authors must demonstrate competence. Table 3.8, below outlines the development from basic categories into global themes.

Table 3.8: Basic categories to global themes

Basic Categories	Organising themes	Global themes
Forwarding the immediate reason for transfer	Painting a relevant clinical picture	Narratives must convey legitimacy
Legitimacy	Consequential information	Organisational boundaries are specific
Risk Management		
Duty of Care	Articulating performative actions	Demonstrating competence
Role Obligations		

Strengths and limitations

The strength of this study is in its prioritisation of documents, document structure and the previously limited area of socio-contextual practice. Examination of clinical transfer documents highlighted their intended function. The focus on document structure highlighted organisational and work-practice completion priorities. Exploration of transfer narratives highlighted the documentation priorities and referential perspectives of clinicians documenting for transfer. A limitation is that little comment can be made on the relationship between physically enacting transfer and documentation-in-action (e.g. access to forms; ease of completion; readership), as clinicians were not directly observed.

3.7 Conclusion

This chapter explained the theoretical underpinnings of the research approach used in this study. The worldview appropriate to this study was pragmatism. Pragmatism was chosen because of the need to draw on mixed methods of inquiry to generate the most comprehensive and robust answers to the research questions. A quantitative approach is an appropriate method to identify documents, document structure, authors, and information typologies. A qualitative approach is an appropriate method to zoom in on socio-contextual practices in the transfer narratives. The following chapter, Chapter 4, outlines the results of quantitative analyses of material and non-material artefacts. This is followed by qualitative findings arising from narrative analysis in Chapter 5.

Chapter 4: Zooming in on Tools

4.1 Introduction

The aim of this study is to identify practice contributing to the persistence of information gaps in the transfer of aged residents from RACF to ED via ambulance. Tools such as checklists, flow-charts, templates, headings and mnemonics are commonplace in health care communication, and almost all health care documentation is formatted and guided by the use of tools of one kind or another. This chapter presents the results of analysis of transfer communication tools used in 80 purposefully selected Digital Medical Records (DMRs) of residents transferred via ambulance from RACF to ED. First presented is a summation of the DMR study population group, and an overview of the data collected. In two parts that follow, the results are presented using descriptive statistics, including frequency counts, cross-tabulation tables, and, where appropriate, graphics. Each transfer tool is outlined, and information captured in the relevant data fields is presented. Following this, results of the application of the non-material information transfer tool 'SBAR' are presented.

4.2 DMR study population characteristics

The organisational groups of interest in this study are numerous RACFs, one ambulance service and one hospital ED. The clinical groups of interest are the clinicians (e.g. RACF nurses, paramedics and triage nurses) employed by each organisation. However, the focus of this study are the documents supplied by each organisation for transfer, and the associated transfer entries made by clinicians. It is also important to gain an understanding of the population group being served and how this group compares more generally with RACF-to-ED transfers in Australia. The population group represented in the data is identified as 'vulnerable elderly residents living in aged care transferred via ambulance to ED'. This section summarises the demographic of those residents and identifies their outcome dispositions.[5]

During the data collection period, 80 residents from 27 individual RACFs were identified as having had information transferred via ambulance and received by ED on their behalf. Ten

[5] In the context of presentation and assessment in ED, 'disposition' refers to admission to hospital, discharge home, or to another facility or unit.

per cent of transfers were determined to be from a single RACF. During data collection, a wide variation in completeness of some of the scanned documents in the DMR was found.

The mean age of residents transferred from RACF via ambulance to ED was 84.6 years. Thirty-one per cent of the study population were male and 69 per cent were female. The main reasons for transfer, as recorded at the time of triage, were musculoskeletal (26.3 per cent), changes in cognition or behaviour (17.5 per cent), pain (13.8 per cent), and gastrointestinal issues (11.3 per cent). In agreement with other studies, over half the residents (59 per cent) transferred to ED in this study were triaged as category 3 (Gafforini & Carson 2013; Ingarfield et al. 2009). Fifty-four per cent of residents were admitted to hospital as an outcome of transfer, 44 per cent were returned to RACFs without admission, and one died while in the ED. Lastly, one resident was transferred to a subsidiary unit of the ED, the Emergency Medical Unit.[6] The median length of stay from the time of triage to ED separation was 6.22 hours. Eighteen residents (22.5 per cent) were discharged from the ED within four hours. These statistics compare favourably against the 7.9-hour mean length of stay previously reported in a Victorian study by Street and Livingston (2012).

Previous statistics representing data from 2010–11, indicate that over 30 per cent of the population in RACFs live in high care accommodation, are aged 85 or over, and are female (AIHW 2012a). Therefore, the episodes of transfer analysed in this study can be considered consistent with the general RACF population. The categories for transfer identified differed slightly from national findings (AIHW 2013) because classification of 'reason for transfer' was made according to triage rather than diagnostic group. This was done because diagnosis implies completion of medical assessment and/or diagnosis on admission to hospital. This study focused on reasons-for-transfer, otherwise known as the 'chief complaint', captured on presentation at the time of triage prior to medical assessment.

4.3 Material tools used across transfer

In Southern Tasmania, three main formalised tools were used in the RACF-to-ED transfers via ambulance: the Yellow Envelope (YE) used by RACFs, the e-PCR created using VACIS by ambulance clinicians, and the triage document created using the EDIS template and

[6] The Emergency Medical Unit (EMU) is a short stay unit (less than 24 hours) run by the ED. Patients admitted to EMU remain in the care of the ED. EMU patients do not require formal inpatient admission under a specific team.

completed by ED triage nurses. These transfer tools are discussed individually, and information captured in the relevant fields presented, in the following section.

The Yellow Envelope

The YE is a kind of transfer form, designed to increase the amount and relevancy of information sent with the resident from RACF to ED. Numerous styles of transfer form exist. Most are formatted as pre-printed checklists on A4 paper, and some are pre-printed checklists on C4-sized envelopes, which serve the dual function of checklist and receptacle to contain loose-leaf hard-copy material (Belfrage et al. 2009; Dalawari et al. 2011; Pearson & Coburn 2013; Zafirau et al. 2012). While neither the structure nor content of transfer forms are universal, many are standardised among organisations in particular localities (Griffiths et al. 2014; Pearson & Coburn 2013).

The YE of interest in this study is a C4-sized envelope designed to store hard-copy documents collated by RACF staff and sent with the resident in the ambulance to the ED. At the time of data collection, Tasmanian Medicare Local (TML), now known as Primary Health Tasmania (PHT), was the official supplier of the YE to RACFs across the state. Therefore, it was expected that only one version of the YE would be found in the DMR. The 'transfer-to-hospital' side of the YE is printed with lists comprised of check-boxes that serve as information reminders, and with pre-headed sentences with blank spaces to document relevant patient information. Despite the ACSQHC (2009) recommendation that the YE and its contents be managed in the same way as other procedures for health records, the initial data collection revealed that only one YE had been scanned into the DMR. Unexpectedly, 20 RACF site-specific tools unique to the RACFs of origin, employing a non-uniform structure and format, were found during data collection. However, these were not the focus of this study and are not included in its analyses.

Confirming the use of YEs across private, public and community-operated RACFs in Southern Tasmania, photocopies of 48 YEs were obtained during the data collection period. After removal of 10 duplicates, 38 were included in the study. Three versions of the YE were identified. The official YE (Type 1), made available to RACF facilities by PHT, and two non-PHT versions (Types 2 and 3). Different datasets were printed on each of the three YEs. (For more information, see Table 3.4: Pre-defined categories by Yellow Envelope, and Appendix 2 for examples of the individual transfer tools.) At the time of data collection, PHT staff advised that they were unaware of other versions of the YE in circulation.

As identified in Table 3.4, uniformity was lacking across the pre-printed information on each of the types of YE. Of the three different versions, Type 1 was the most inclusive. Types 1 and 2 listed administrative details more frequently than biomedical or health history information: 13 administrative compared to 11 clinical in the first, and four administrative compared to one clinical in the second. None of the three types of YE included a specific field for reason for transfer, although it was noted that two did include a section marked *other* at the bottom of the YE which could be used for that purpose.

Eight of the 38 YEs' check-boxes indicated that a transfer letter was enclosed, and 14 had none of their check-boxes filled in. Sixteen (42.1 per cent) had only partially legible photocopied check-box lists regarding a transfer letter. There is no requirement to sign any version of the YE on completion, and therefore it is not possible to ascertain the qualifications of the person collating and/or entering information.

As the official YE, Type 1, supplied to RACFs by PHT is the approved version, and was also the most frequently used for transfer by RACFs, it is data from these YEs that are dataset used to identify information included on the YE checklists that were collated and sent from RACF in transfer. The following section describes the hard-copy information sent with residents for transfer to ED as compared to the official Type 1 YE checklist.

Hard-copy documents sent in transfer in accordance with YE checklists

Hard-copy documents sent from RACF to ED were scanned into the DMR. The volume of pages of information per transfer ranged from three to 41 for each resident. The mean number of pages sent in transfer was 2.65, and the median 12.5. RACF hard-copy documents scanned into the DMR in each transfer episode varied in topic and level of completeness. Table 4.1, below, provides a summary of the hard-copy documents transferred from RACF to ED. Documents on a specific topic consisting of one or more pages have been included in the content count as one.

Table 4.1: Documents sent from RACF to ED

Type of Document	No.	Valid %
Medication chart	48	94.1
Administration	42	77.8
Care plan	27	52.9
Progress notes	27	51.9
Next of kin with full contact	34	42.5
Vital signs at time of transfer	23	50
Advance Care Directive or similar	23	41.5
Letter of transfer or progress note re: transfer from Registered Nurse	23	44.2
Activities of daily living charts	16	30.8
Charted vital signs	5	10
Specific transfer letter or progress note entry from General Practitioner	4	7.7
Bowel chart	1	1.9
Cognitive assessment baseline	1	1.9

Medication profile

Medication profiles were missing in 32 RACF Transfer episodes. Forty-eight RACF Transfer episodes scanned into the DMR included a medication profile or photocopy of a medication chart. Most often this included the prescriber page, but omitted information, including on the last date/time of medication dosages. Allergy lists were also omitted from these profiles. However, allergy information was identified in one transfer narrative and several site-specific transfer tools.

Administration and RACF contact details

Administrative documents (such as those providing residents' personal details, Medicare, Veterans Affairs, or private health insurance information) were available in over 70 per cent

of the 46 RACF Transfer episodes that had complete or partially complete administrative documents accessible through the DMR. Only 32 (69 per cent) of the available complete or partially complete administration forms showed the name of the resident. Forty-two of 46 (91 per cent) administration forms included RACF service provider details.

GP contact and contact details

The documentation of specific GP details, such as practice name and location, on hard-copies of RACF administration forms varied significantly. Sixteen RACF Transfer entries written in progress notes referred to having contacted or attempted to contact the resident's GP or after-hours GP prior to transfer (see Figure 4.1, below). Nine transfers (11.3 per cent) included progress note entries authored by a GP from the days preceding and/or day of transfer. Four of these resulted in specific documentation of a transfer letter intended for receiving clinicians authored by the resident's GP. Data collected from the YE identified 23 GPs by name, of which three included the name of the GP's practice, and 12 the GP's contact phone number. As the YE data were collected separably from data in the DMR, YE and progress note documentation of GP details were not cross-compared.

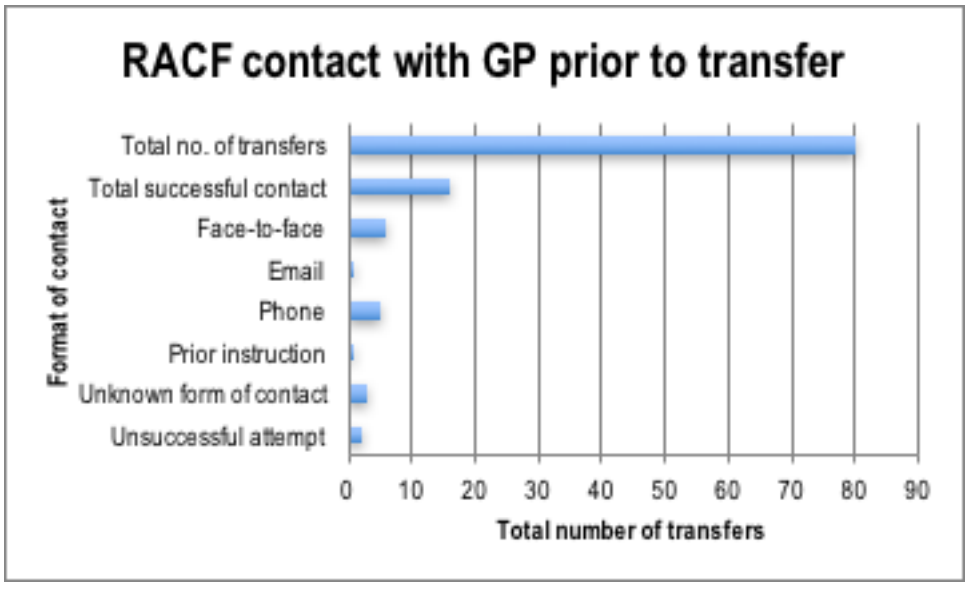

Figure 4.1: Documented RACF contact with GP prior to transfer

Contact with a GP was identifiable as having occurred face-to-face in six RACF Transfer episodes. An additional reference embedded in RACF progress notes identified the GP having left prior instruction to transfer the resident without further communication if current treatment was deemed inadequate. In most cases, reference to contact with the GP was either to (a) inform the GP of transfer, where information was emailed or a phone message recorded and verbal contact may not have taken place, or (b) to document authorisation for

transfer to hospital. GP review prior to transfer was more likely to result in a 'Recommendation' or 'Request' (p 0.001, CI 0.42–1.64 (rounded)), documented in the transfer narrative.

RACF contact information

Verbal clarification or acquiring additional information after transfer is facilitated by direct phone contact (Robinson et al. 2012). Specific contact nurse identification and phone contact details for the RACF of origin were provided in just two transfer episodes. An RACF address and general facility phone number were identified in 14 transfer episodes. Twenty-six transfer episodes provided a facility address only, and 11 provided no contact information. Neither RACF address or nurse contact information was unavailable for 27 transfer episodes.

Level of care and transfer pre-notification

A level of care (high/low/respite) was specified in 34 transfer episodes. Twenty-nine residents were high care, three low care, and two were in respite accommodation. In the remaining 46 transfer documents, an identifiable level of care was absent. Documentation that ED was notified of the pending transfer was identifiable in 11 (13.8 per cent) transfers.

Care plans

Care plans for residents were available in 27 (33.75 per cent) of the 80 DMR transfer episodes accessed. One care plan was incomplete. Care plan documents were missing in 52 of the 80 (62.5 per cent) RACF Transfer records scanned into the DMR.

Vital signs

Although there is no universal consensus on essential RACF-to-ED transfer information (Griffiths et al. 2014), vital signs at the time of transfer are a key piece of information often noted to be missing RACF Transfer (Morphet et al. 2014). In this study, approximately half of RACF Transfer documentation included progress notes (51.9 per cent) that included some vital sign information (50 per cent), recorded close to the time of the transfer event. The location on forms of vital sign details relevant to transfer varied between RACF organisations. Some were included within progress notes, others on specific forms, some as discrete inscriptions inside progress note page margins, and others included ad hoc in the corner of a YE, making them difficult to identify.

RACF data collection for vital signs included at the time of transfer found 21 sets or parts thereof documented. Cross-tabulation of 'vital signs' with RACF 'reason for transfer' found that, in most transfers to ED, documentation of this data was ad hoc and not specific to the nature of the transfer event. However, although not statistically significant, these results also showed that vital signs or parts thereof were not documented for transfer reasons thought to be behavioural, or device- or endocrine-related.

Advance care directives

An Advance care directive (ACD) or similar document enables an avenue for residents who have expressed their wishes prior to deterioration in writing to advocate for themselves (Australian Health Ministers Advisory Council (AHMAC) 2011). The ACD is therefore considered an important decision-making tool to guide immediate and future care for residents transferred to EDs (Carter, Skinner & Robinson 2009; Cwinn et al. 2009; Dalawari et al. 2011). Twenty-three RACF Transfers included an ACD, Goals of Care or similar document. In 57 transfer episodes (71 per cent), an ACD or similar document was indeterminate or missing from the DMR.

Person responsible/next of kin

A person or persons, such as the resident's family or other identified next of kin who know the resident, are important informants for ED clinicians, in addition to acting as a bridge between ED and RACF (Robinson et al. 2012). In this study, six RACF entries documented contact with family members regarding transfer. Three family members were identified as present at the time of the resident's deterioration. One initiated the request for transfer. An RN on duty contacted one family member to arrange transport to the ED for investigations the following morning, but the resident was then received at the ED via ambulance on the same day as the phone call. Next of kin contact information documented in transfer was highly variable. Next of kin was not entered in two transfer records, in name only in one transfer record, as name and phone number in 13, as name and address only in one, and as name, address and phone number in 34. Information on the person responsible or next of kin was missing or not scanned into the DMR in 29 RACF Transfer episodes.

Cognitive state

An up-to-date cognitive assessment facilitates decision-making in ED. Baseline cognitive function is one of the categories of information most frequently sought by ED clinicians (Morphet et al. 2014). A formal cognitive assessment was located in the DMR in only one RACF Transfer episode. However, formal and informal terminology being used to describe

cognition in RACF transfer narratives was frequent. These terms were: ‘no cognitive decline’ (3.8 per cent), ‘dementia’ (26.3 per cent), ‘Alzheimer’s’ (8.8 per cent), ‘confused’ (5 per cent), and Glascow Coma Score (GCS) (1.3 per cent). Three entries made no reference to the resident’s cognition. Cognitive assessment information was missing from the DMR for 30 RACF Transfer episodes.

Miscellaneous YE checklist items

Falls risks, oxygen requirements, and alarms (wandering) sections of the YEs were not completed on any YE, and/or were illegible due to poor photocopying.

Return transport advice

Four of the five RACFs transferring residents for concerns regarding behaviour/aggression management implied or directly stated that the RACF facility could no longer accommodate the resident and that they were reluctant to accept them back to the facility.

Information documented in YE checklist: Other

ED clinicians consider a documented reason for transferring a resident from RACF to ED to be essential information (Dalawari et al. 2011; Griffiths et al. 2014; Parashar, McLeod & Melady 2017; Platts-Mills et al. 2012). The format of the YE checklist does not include space to document reason for transfer. The section headed ‘Other’ on the YE was used to document reason for transfer on three of the 38 YEs. This section was potentially used because it provided space to write in (three lines on Type 1, one line on Type 2).

Summary

The official YE in this study is endorsed and supplied to RACFs in southern Tasmania by local organisation PHT. Use of the official YE in practice appears to be discretionary. Discretionary or non-compulsory use enables RACFs to take liberties in producing diluted transfer forms that resemble the endorsed YE but with key information gaps, or, alternatively, the option of not using a transfer form at all. That there is more than one YE in use (as well as multiple site-specific versions) in southern Tasmania corroborates previous findings that information considered important in RACF-to-ED transfer via ambulance is highly variable and, in numerous cases, hidden away and difficult for information receivers to find (Cwinn et al. 2009; Hoare 2009; McCloskey 2011b; Zafirau et al. 2012).

The order of information as listed on the YE influences the transfer of documents, and also, by association, the information sent in hard-copy. The format of the official YE checklist

prioritises administrative information over clinical information; with the exception of medication documents, more administrative data is sent in hard-copy than clinical information. The official YE lacks space to document reason for transfer. RACF nurses use the 'Other' section, and/or progress note entries as an alternative space to document reason-for-transfer. 'Other' is not prioritised on the YE checklist, is the last heading located at the base of the YE, and very few authors use the space to document reason for transfer.

Safe transfer from RACF to ED requires that transfer documents are clearly labelled, and that next of kin contact details are entered in full. Administration forms are formatted to identify RACFs over residents. Sixty-nine per cent of RACF administration forms did not include the resident's name, making it unclear to whom the included information referred. In contrast, 91 per cent of transfer administration data included identification of the RACF of origin. Identification of the resident is required on YEs Types 1 and 2 only. It is reasonable to suggest that poor labelling and removal of loose hard-copy documents risks documentation mix-up at the bedside. In addition, completion of next of kin information is ad hoc. Incomplete next of kin contact information takes time to follow up, and likely increases the risk of inaccurate or inappropriate administration of care.

GP referral is identified as a key component of a smooth transition across services for RACF residents, whether on a temporary or permanent basis (see also Chapter 2). A range of communication media were used in attempts to contact GPs prior to transfer. Contact attempts were few, and sometimes directed to a substitute GP not known to the resident covering after-hours care, leading to variable levels of success. Reasons for contacting a GP included courtesy calls to the resident's designated GP and seeking advice or approval for transfer to ED. Difficulties in getting contact with GPs, particularly with the resident's own GP, negatively affected the comprehensiveness of transfer information. Where GP documentation is maintained off-site and inaccessible to RACF nurses collating data for transfer (see Chapter 2), contact is particularly important to gathering and collating comprehensive transfer information.

Acutely unwell residents are at risk of rapid deterioration, often due to the presence of chronic comorbidity and lack of physical reserve (Schnitiker et al. 2011). Up-to-date and accessible clinical information documented at the time of transfer increases the visibility of trends in clinical information over time, and thereby contributes to clinical decision-making from the time of arrival in the ED (Rutschmann et al. 2005). Approximately one quarter of residents transferred to ED had a full or partial set of vital signs documented at the time of transfer. The location of vital signs in RACF documentation was not uniform, which made the information difficult to find. In addition, only one resident was transferred with a formal

cognitive assessment, even though 14 residents were transferred for altered states of consciousness or behavioural concerns. This suggests that these residents were assessed without a cognitive baseline for comparison against their presenting problem. Lack of clinical information is known to result in more non-invasive and invasive testing in the ED, which is likely to increase the amount of time spent there, and correlates with an increased risk of adverse event (Boockvar, Fridman & Marturano 2005; Girio-Fragkoulakis et al. 2011; Griffiths et al. 2014; McCabe & Kennelly 2015; Morphet et al. 2014; Spirivulis et al. 2006).

Ambulance Electronic Patient Care Record

Transfer to hospital via ambulance requires creation of an Electronic Patient Care Record (e-PCR). The e-PCR is a legal record of a patient's personal health information (Lang 2012). Ambulance services in the eastern states and territory of Australia use a 'standardised' electronic platform known as the Victorian Ambulance Clinical Information System (VACIS) for this purpose (Ambulance Victoria 2012). VACIS information fields cover administration, assessment, treatment and outcomes, and billing information (Lang 2012). In addition, the e-PCR enables entry of an open written narrative for the transfer event. While the e-PCR is not designed specifically for handover, the record can be printed and retained by the ED. In this study, VACIS documents are printed for the receiving ED as a *required* professional courtesy (Ambulance Tasmania email, name withheld, 29 September 2017). While the pre-defined fields of the e-PCR differ slightly depending on the type of call-out event, they are generally represented by the following figures taken from the VACIS and Tablet Computer User Handbook (2011), which was initially written for Queensland ambulance services and later edited for use by Ambulance Tasmania. Mandatory fields within the VACIS are clearly accentuated. Information can be added from drop-down menus or in free-text, depending on the field. Entering data from a drop-down menu may reveal further mandatory fields. The following is a brief overview of VACIS data-entry fields as used by ambulance paramedics in this study.

Access via the DMR

Ambulance e-PCRs were accessed via the DMR for the same RACF Transfer cases. Seventy-two e-PCRs were available. Of these, 69 were complete. The remainder were missing or partially missing certain pages.

Ambulance crew details

When using the VACIS tablet for the first time during a shift, paramedics must first log on, entering their team name (usually the ambulance station location) and highest skill-set of the

team. For example, if a volunteer, paramedic, and intensive care paramedic form a crew, the highest skill-set is entered as ‘intensive care paramedic’ (ICP). This field may be updated throughout the course of the shift, but if the crew is unchanged throughout, it need only be entered once and is then automatically populated to the next case until the team logs off at shift change.

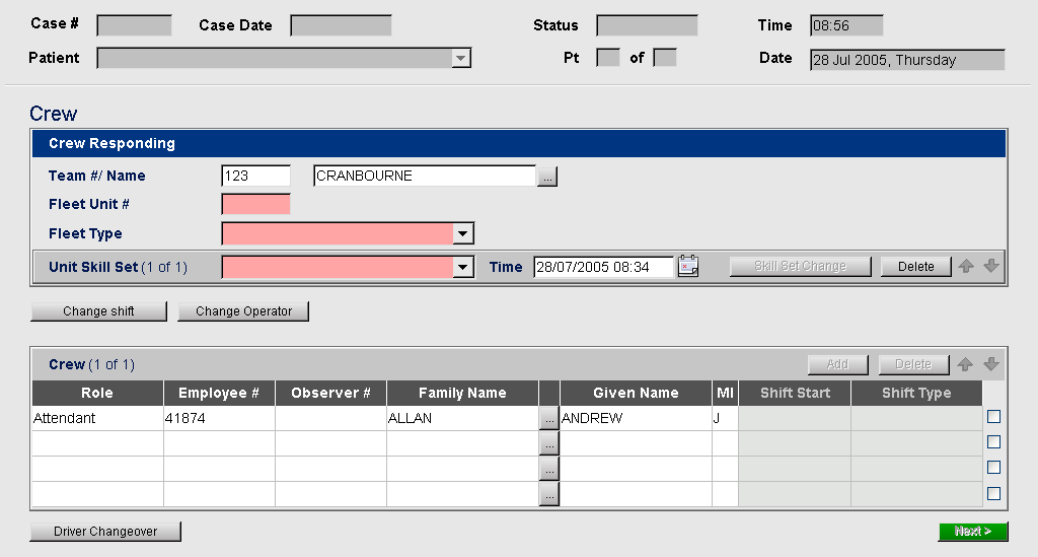

Figure 4.2: e-PCR crew

In this study, the ambulance crew identified were 26 intensive care paramedics, and 45 paramedics. One transfer was carried out by a private ambulance service operator. The skill level of the private operator was not provided. Information on crew skill was not scanned into the DMR for eight of the 72 e-PCRs.

Case/scene

Mandatory data for the ‘Case/scene’ field include date and case number for the day, a description of the initial call-out, the location of the ambulance when the ambulance crew were dispatched to the case, and the corresponding dispatch code. Entering any data into the mandatory fields requires completion of the section before the author is able to progress (Queensland Combined Emergency Services Academy 2011).

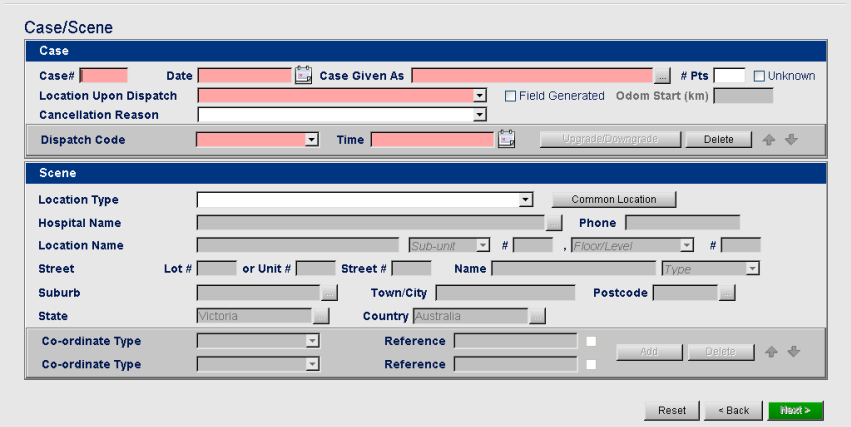

Figure 4.3: e-PCR case/scene

Scene descriptors can be identified by suburb, city/town or postcode. From this, a further window opens in which suitable data can be selected. Alternatively, the name of a facility may be entered. Entering a facility name automatically populates a corresponding address. Completion of the 'case/scene' field is mandatory. Completion enables the paramedic to navigate further fields (Queensland Combined Emergency Services Academy 2011). Case and date information were documented in 69 e-PCRs and were missing from 11 transfer episodes. Time of dispatch was available in 72 e-PCRs and was missing from 8 transfer episodes.

Patient information

Demographic details are entered for the patient as shown in Figure 4.4, below. Address details are also entered in the event that the location of the patient is not the same as their home address.

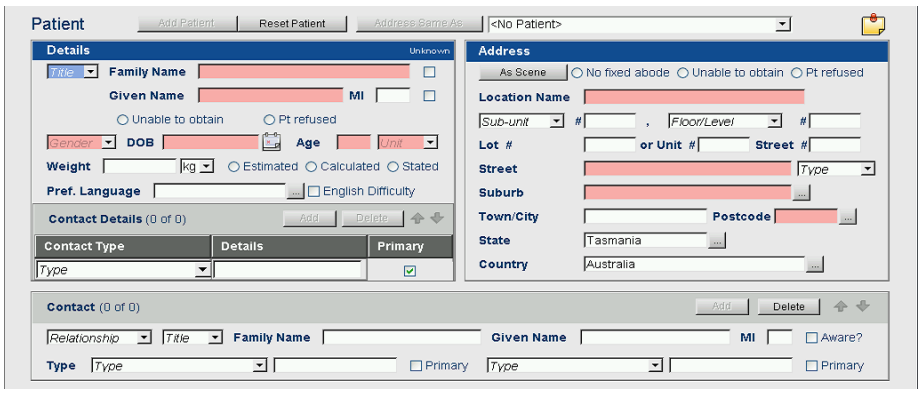

Figure 4.4: e-PCR patient information

Incident locations and addresses were not recorded in the initial data collection and therefore cannot be referenced.

Past history

The ‘past history’ field contains four main summary screens. Mandatory fields are: ‘pre-existing conditions’, ‘allergies’, and ‘current medications’. Opening ‘pre-existing conditions’ will bring up a drop-down list from which conditions can be selected. The ‘allergies’ box brings up a free-text field, while ‘current medications’ opens further drop-down lists from which appropriate selections can be made. Further ‘past history’ options can be selected by opening ‘risk factors’.

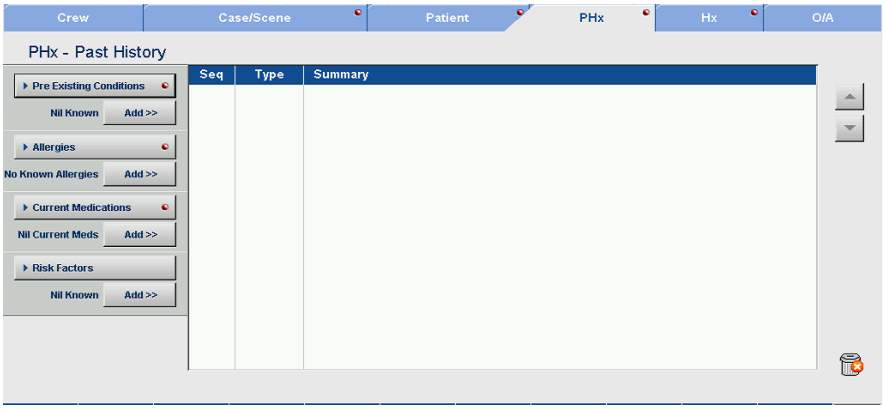

Figure 4.5: e-PCR past history

Prior medical/surgical of social history was documented in 34 e-PCRs. Thirty-seven e-PCRs did not contain this information. Nine e-PCRs were missing this information and/or the relevant pages had not been scanned into the DMR.

Case history

Distinct from the patient’s past medical history, ‘case history’ refers to the current health complaint. Opening the ‘case history’ tab requires inclusion of the general classification of the patient’s current condition or the nature of the case by selecting the most appropriate condition descriptor from a drop-down list. Conversely, the ‘case nature’ field is designed for free-text entry.

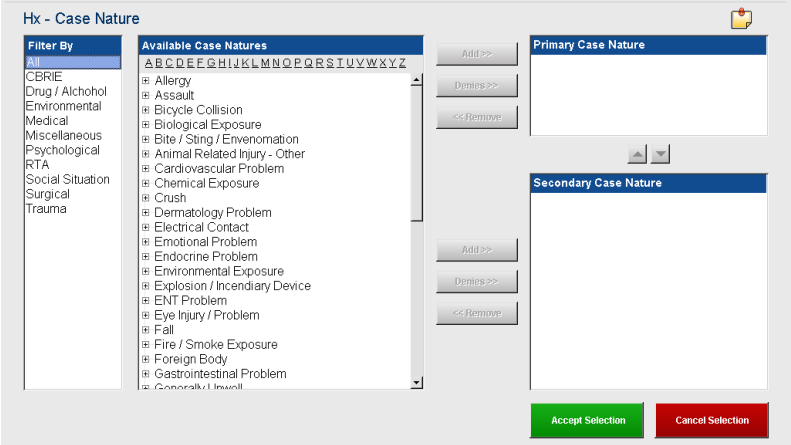

Figure 4.6: e-PCR case nature list

On arrival (O/A)

Opening the 'O/A' tab brings up three fields. These are: 'scene findings', 'others at the scene', and 'patient complaint'. 'Scene findings' enables entry of other persons at the case scene, such as medical or nursing staff, paramedics or police. After recording the relevant persons' details, a free-text field is used for recording any instructions. The 'patient complaint' field assists authors to document the patient's complaint using drop-down lists, pre-defined complaints, and definable anterior and/or posterior body mapping.

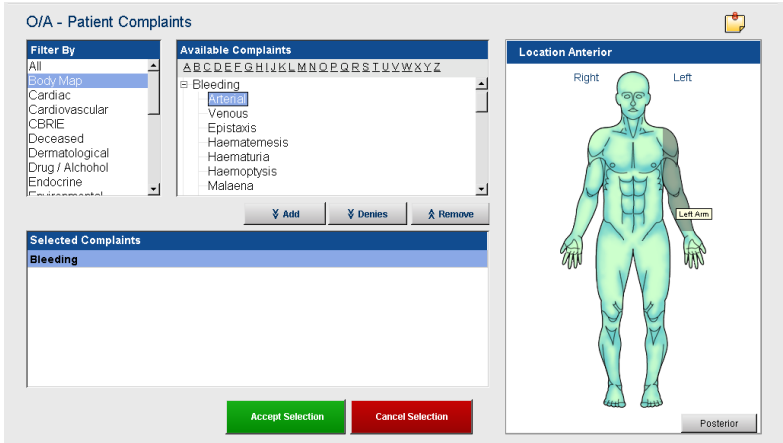

Figure 4.7: e-PCR patient complaints

Both the case history and post-assessment reason for transfer (patient complaint) were available in 72 e-PCRs. This information was missing or not scanned in to the DMR for eight transfer episodes.

On examination (O/E)

Continuing documentation of patient assessment, the ‘O/E’ tab opens three further fields. Mandatory inclusions are: ‘primary survey’, ‘secondary survey’ and ‘initial assessment’. Clicking either the ‘primary’ or ‘secondary survey’ boxes will open drop-down lists with relevant data selectable. Selecting from the drop-down list of relevant data from the ‘initial assessment’ box will populate the ‘primary survey’ field with the author’s first choice, and place subsequent selections in the ‘secondary survey’ field.

Vital signs survey (VSS)

Opening the ‘VSS’ tab brings up a table of vital signs and, to its right, an advanced assessment table.

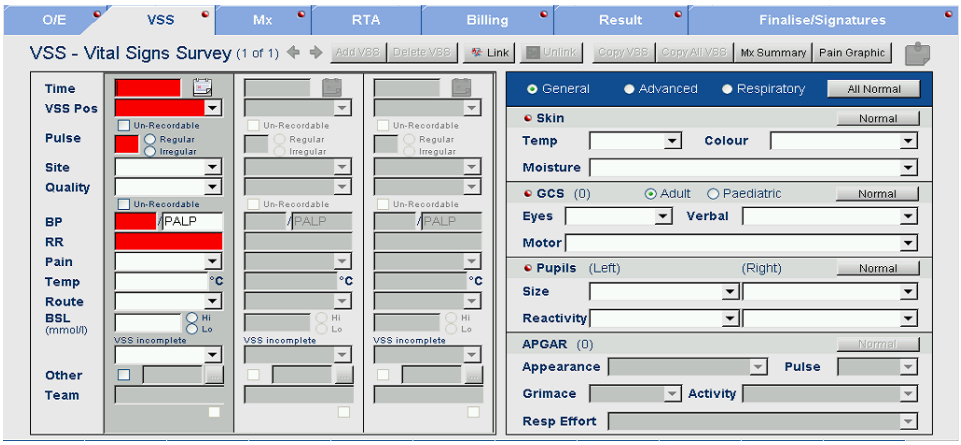

Figure 4.8: e-PCR vital signs survey

For patients unable to rate the quality of their pain using a numerical scale, authors can document using various alternative tools such as the Wong Baker pain scale (Queensland Combined Emergency Services Academy 2011).

Management Mx

Opening the ‘Mx’ tab brings up 5 fields of entry. These are: ‘management’, VSS, ‘revised assessment’, ‘secondary survey’ and ‘consultation’. The ‘VSS’ and ‘secondary survey’ links grant access to these fields and continued recording of findings. As it sounds, ‘management’ facilitates the recording of cares/treatments provided to the patient, such as airway assistance, comfort measures or medication. The default identifier of these cares/treatments is the crew member logged on to VACIS. Other providers can be selected from a drop-down menu and added as appropriate.

The ‘revised assessment’ tab enables authors to easily update changes to the patient’s condition at any stage. The ‘consultation’ box prompts authors to document any external consultations sought for the case.

Road traffic accident (RTA)

As the name indicates, the ‘RTA’ tab opens fields that apply specifically to road traffic accidents. It is a non-compulsory field for non-road traffic cases.

Billing

Clicking on the ‘billing’ tab opens ‘billing categories’. The type of billing selected from the drop-down menu will enable or disable further relevant fields in this section.

Billing information was not recorded in the initial data collection. However, ‘billing’ is a mandatory field. These data include the highest recorded skill-set of the attending ambulance crew, the kilometres travelled, and any relevant concessions applicable to the patient being transported.

Results

Opening the ‘results’ tab, opens three fields. these are: ‘final assessment’, ‘referral’ and ‘transport’. ‘Final assessment’ is not dissimilar from the previous ‘initial assessment’ and ‘reassessment’ fields. In the ‘referral’ field, authors select any referrals made to the patient from a drop-down menu, such as advice to see a specialist service or GP. Selecting ‘transport’ opens the transport dataset window. Sections of this field may be populated from earlier data entries. Sections not completed are attended to at this time.

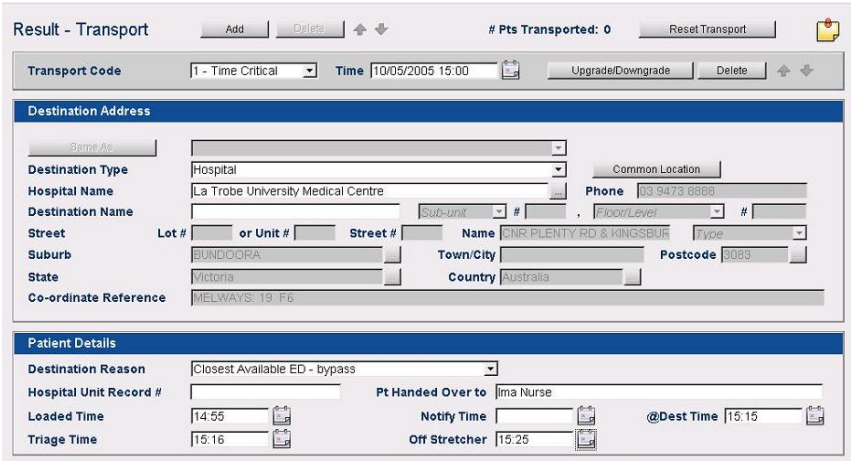

Figure 4.9: e-PCR result – transport

In addition to identifying the destination, this field includes the time the patient is loaded into the ambulance, time of arrival to ED, pre-notification time, time of triage, and person taking over the patient's care or receiving handover.

Time of separation from the scene and time of arrival in ED were documented in 71 e-PCRs and missing or not scanned into the DMR in nine e-PCR transfer episodes.

Finalise/signature

Opening the 'finalise/signature' tab opens a screen enabling the fulfilment of legal requirements to sign the e-PCR and to add disclaimers or refusal of treatment information.

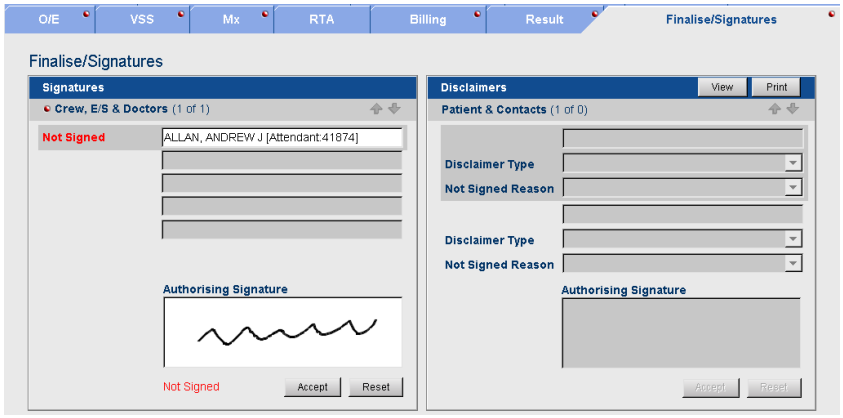

Figure 4.10: e-PCR finalise/signature

A preview of the e-PCR as it would appear when printed is available for review at any time during data entry. A full hypothetical version of the e-PCR kindly provided by Ambulance Tasmania is attached for reference in Appendix 5. This version places some clinical information before patient identification and crew details, but otherwise reflects the hard-copy structure of the e-PCR found in this study.

Vital signs

Sixty-eight e-PCRs documented residents' vital signs. Three did not document this information, and the information was missing or not scanned into the DMR in nine e-PCR transfer episodes. Often more than one set of vital signs were documented from the time of initial patient assessment and en route to the ED. In addition, 34 transfer episodes included measurement of blood glucose. Documented vital signs are shown below.

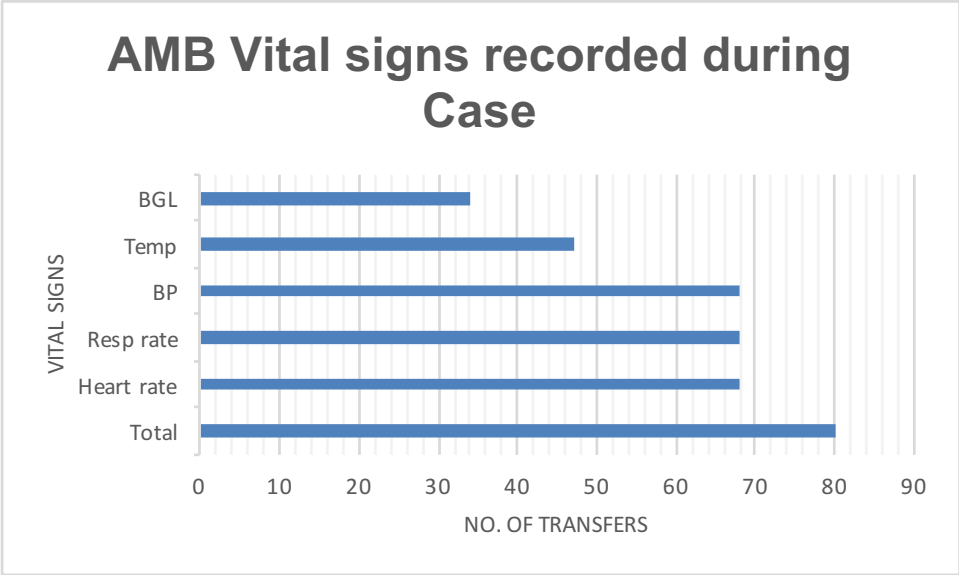

Figure 4.11: Vital signs recorded by ambulance in the e-PCR

(BGL: blood glucose level; Temp: temperature; BP: blood pressure; Resp rate: respiratory rate)

Altered level of consciousness

Sixty-eight e-PCR entries documented a Glasgow Coma Score, separated into subsets E, V and M, and scored to provide a measurable scale of consciousness (Ambulance Victoria 2016). Narratives describing the transfer event twice used the term ‘dementia’, and once the phrase ‘no cognitive decline’. Documentation of cognitive state using GCS in the e-PCRs was provided for far more of the residents than the 14 transferred from RACF to ED due to an alteration in cognitive state or behaviour, identified at triage as the primary reason for transfer.

Provision of treatment

Forty-four e-PCRs (55 per cent) included documentation of a treatment provided by the ambulance crew. Frequently, more than one treatment was documented per resident. Provision of medications and/or fluids also included time, dose, and route of administration. Treatments provided are shown in Figure 4.12, below.

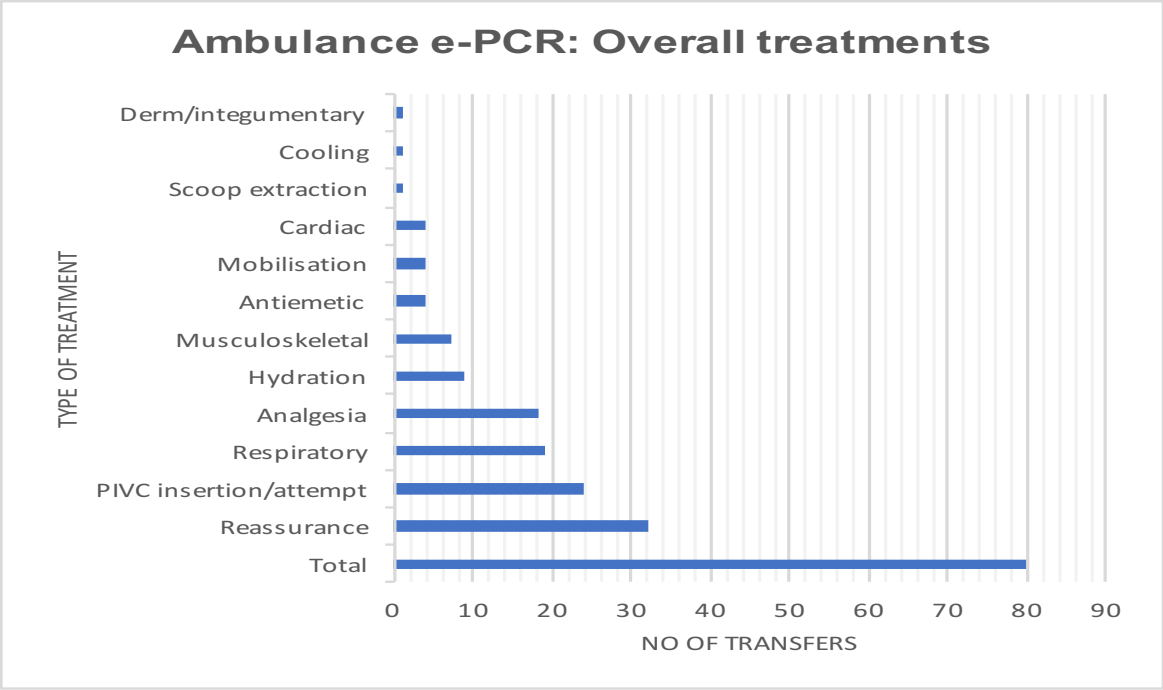

Figure 4.12: Ambulance e-PCRs of treatment/service

Twenty-seven e-PCRs did not record provision of treatment, and in nine other DMRs this information page was missing or had not been scanned. All available e-PCRs had a description of the case event and provisional diagnosis documented. No e-PCR included road traffic information, as this was not applicable to RACF residents in this study.

Contact with family

The e-PCR can include family contact details, though this information was notably absent from the records accessed in this study.

Length of the e-PCR

The format of the e-PCR aligned with the paper PCR. Each format provided a consistent and similar approach to documentation. Each e-PCR was approximately three to six pages in length. Due to the headings and consistency of format, the information remained easily locatable despite variation in length (see also Appendix 5).

Summary

The main purposes of the e-PCR are to record patient care, to communicate between multidisciplinary teams, and to increase continuity for patients (Eaton 2014). Standardisation of the e-PCR suggests that the type of content is predictable for readers, and that

information can be easily located. The e-PCR is a generative document intended to order facts about individual ambulance call-outs, which, when completed, becomes a source of data that intertwines information gathering and procedural knowledge-in-action in a socially accepted arrangement (Nicolini 2009; Prior 2003). Although a number of different fields in the e-PCR can be brought into action, thus varying its length, the mandatory options and set drop-down menus in VACIS software mean that the e-PCRs are rule-based, and that the format is relatively standardised regardless of the type of call-out attended.

The e-PCR is intended for a number of different readers. The end product is not completed at the time of triage (though anecdotal evidence suggests that some ambulance officers do read from e-PCRs at the time of triage), but usually after physical transfer of the patient from the ambulance stretcher to an ED trolley (Department of Human Services 2007). The e-PCR is a record of the crew skill-set, the call-out event, patient management, and other billable information. Therefore, the e-PCR is an organisational record in which the ambulance crew are identifiable, enabling them, and, by association, the ambulance organisation to be accountable. It is also an episodic clinical record for the patient, an administrative record from which funding is recouped, an auditable record (of clinical performance and patient outcomes), and an auditable record used by the state to determine if the state-provided ambulance service and ED are meeting state obligations (Tasmanian Audit Office 2016; Tasmanian Government 2003). Despite the multi-purpose function embedded into the e-PCR, when printed the hard-copy format prioritises clinical information over administrative data.

During transfer, the e-PCR is primarily a clinical record of information such as the reason for ambulance call-out, the reason for transfer, the initial phases of care and responses to care, all documented in the context of the patient's medical history and the background of the presenting problem. Despite containing pertinent pre-hospital information, reference to the e-PCR in ED is not routine, or necessarily desirable (Knutsen & Fredriksen 2013). However, when considered in conjunction with ED clinical findings, the e-PCR summary of pre-hospital information can be important in determining future treatment strategies (Knutsen & Fredriksen 2013).

The e-PCR requires that ambulance crew authors use structured scales of reference to record clinical detail. Vital signs are an important scale of the body's response to illness and injury (Gilboy et al. 2011). In addition to documentation in the transfer narrative, vital signs are entered into the appropriate sub-section of the e-PCR, where they are conveniently tabulated. Entry in this format enables printing in an easily readable and reviewable table. In this study, the vital signs blood pressure, respiration rate and heart rate were prioritised by

ambulance authors; temperature and blood glucose levels were less commonly documented. This finding may potentially be due to non-recognition of a clinical component to some transfers, and the perception that complete sets of vital signs in these cases represent unnecessary work (Porter et al. 2008). Further, specific references to the Glasgow Coma Score were made when documenting a patient's level of consciousness. Generalised subjective terms such as 'dementia', 'Alzheimer's', or 'cognitive decline' tended to be avoided. The repeated measurement and documentation of clinical indicators using pre-defined scales of reference aids observation of clinical trends. Therefore, continued GCS monitoring looks for improvement or deterioration in consciousness at the earliest stage of change (Ambulance Victoria 2016). Detection of a change allows adjustments to care management as appropriate.

EDIS triage tool

Triage nurses are the first point of ED contact for patients who self-present and for those who arrive by ambulance. On the arrival of patients, triage nurses determine the presenting problem as given by the patient, or the presenting problem and/or reason for transfer provided by ambulance clinicians. In this study, all residents transferred from RACF to ED arrived via ambulance. A common electronic information management system used for capturing triage data in several Australian states, such as Queensland, South Australia, New South Wales, Western Australia, Tasmania, and in numerous, mostly private hospital installations throughout Victoria, is the Emergency Department Information System (EDIS) (OAG 2013; OzEMedicine – Wiki for Australian Emergency Medicine Doctors 2016). The EDIS software has had multiple iterations since its introduction, and further takeover/development by software companies HAS Solutions, iSoft, IBA, and, lastly, Computer Sciences Corporation (CSC) (OzEMedicine - Wiki for Australian Emergency Medicine Doctors 2016). Therefore, different levels of functionality exist, dependent on time of installation and upgrades. All versions, however, are primarily designed to capture basic patient demographics, nature of presentation, and clinical urgency.

Compliance with College of Emergency Nursing recommendations requires that triage be undertaken by a qualified and experienced Registered Nurse who develops and maintains their clinical expertise (College of Emergency Nursing Australasia 2014, p. 2). Using that expertise with information provided by ambulance clinicians, the triage nurse identifies the 'chief complaint' and categorises 'urgency' in line with the Australasian Triage Scale (Department of Health and Ageing 2009). The ascribed numerical value of the five-point Australasian Triage Scale corresponds to degree of clinical urgency, where 1 requires immediate, time-critical attention and 5 allowing a wait of two hours prior to medical

assessment (Department of Health and Ageing 2009). The 'chief complaint' may differ from the ambulance 'provisional diagnosis', as triage determines urgency on the basis of signs and symptoms rather than diagnoses (Department of Health and Ageing 2009).

In addition to application of the Australasian Triage Scale categorisation of time-critical intervention, triage documentation requires patient identification, mode of arrival, concise description of the primary complaint, and free-text that enables entry of other relevant information (ACEM 2000). The triage interface of the EDIS version in use by the study hospital at the time of data collection is shown in Figure 4.13, below.

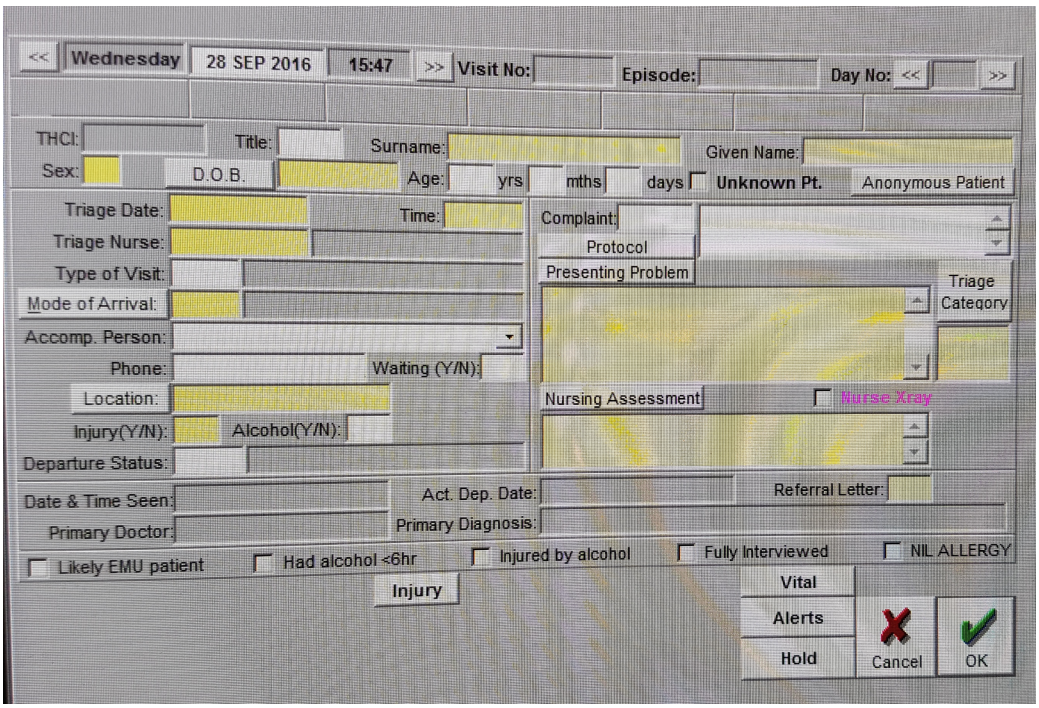

Figure 4.13: EDIS triage user interface

Mandatory fields

The EDIS interface in use at the study hospital has four information categories that must be completed. The first field includes personal patient demographic information (i.e. name, sex, date of birth), the second the date and time (date and time are generated automatically by populating the fields), the triage nurse code (personal identifier), the mode of arrival (i.e. ambulance/police/walking/wheelchair, etc.) and the location (the geographical place e.g. within the department, remaining with the ambulance crew, or waiting room). The third field collects data reporting the presence or absence of injury. The fourth field comprises the chief complaint, triage nurse assessment, triage category and availability of referral letter on arrival. With the exception of overriding the patient's name and date of birth in the case of

unknown persons whose details cannot be confirmed at the time of data entry, the triage episode cannot be closed unless the mandatory fields are populated. All presentations receive a unique numerical patient identifier, the Tasmanian Clinical Health Identifier number, which is assigned and/or verified (if pre-existing) with a three-point identification check by ED clerical staff along with other administrative data (OAG 2013).

The printed triage hard-copy

On completion of triage, the EDIS triage data are printed in hard-copy (Appendix 6). If the patient is allocated a location within the department, the hard-copy follows the patient to a bedspace. Alternatively, it is placed in a queue of folders for patients allocated to the departmental waiting room. The order of information on the hard-copy prioritises the patient demographic, chief complaint, triage assessment, alerts, location of the patient and triage category. Triage nurse identifier and signature are printed on the hard-copy. However, as this information is accessible via the electronic interface it was not additionally entered in hand-written format at the study hospital. Vital signs follow the order of information. The fields for vital signs and nursing assessment are not populated at the time of triage. Vital signs and nursing assessment data fields are filled in by the nurse receiving the resident physically to a bedspace by hand.

Triage categorises according to urgency and defines the amount of time a patient may safely wait before receiving medical assessment in the ED (Department of Health and Ageing 2009). Residents transferred from RACFs to EDs most commonly fall into lower categories of urgency (Arendts, Dickson, et al. 2010). In this study, it was also assumed that transfer information for residents in lower categories of urgency was more likely to be completed than for residents transferred under urgent circumstances. Eighty episodes of triage were collected. EDIS mandatory fields were completed in all 80 triage entries. Of these, 79 datasets were obtained from scanned records in the DMR and one dataset not available in the DMR was obtained with assistance from the Department of Health and Human Services IT service provider.

The study hospital utilises the Australasian Triage Scale. This study only collected data for residents triaged into categories 3, 4 and 5 at the end-point of transfer from RACF to ED. Forty-seven residents (58.8 per cent) arriving at ED were triaged into Category 3, 30 (37.5 per cent) were triaged into Category 4, and three (3.8 per cent) were triaged into Category 5. Seventy (87.5 per cent) had a documented triage nurse assessment entered at the time of arrival. One triage nurse assessment field contained only pre-arrival information, (pre-arrival information documented by a call-taker such as the Medical Officer in Charge, Registered

Nurse in Charge, or triage nurse[7]) and no further assessment documented at the time of arrival. Nine (11.25 per cent) contained a combination of the pre-arrival entry and additional triage nurse assessment.

All triage episodes had a documented chief complaint. The content of triage nurse assessments was synopses of pre-arrival treatment and vital signs. Of the 70 episodes that contained documentation of triage nurse assessment, 22 (27.5 per cent) included a synopsis of treatment(s) provided prior to arrival in the ED, and 59 (73.8 per cent) documented the resident's vital signs. It was not discernible if the vital signs were taken on arrival by the triage nurse, if the vital signs were reiterations from the ambulance clinicians, or if the vital signs were initial sets from RACFs.

Vital signs

In keeping with international triage systems, the Australasian Triage Scale places the taking of vital signs at the discretion of the triage nurse. The taking of vital signs should not slow the triage process, and is an assessment task most frequently undertaken in lower triage categories e.g. Australasian Triage Scale or Emergency Severity Index categories 3, 4 and 5 (Department of Health and Ageing 2009; Gilboy et al. 2011). Vital signs reflect the physiological status of the patient and may be used as a scale of reference in determination of triage category (Department of Health and Ageing 2009). In this study, vital signs (heart rate, respiratory rate, blood pressure, temperature and also blood glucose level) were counted to gain an understanding of those most commonly documented for RACF residents at triage (Figure 4.14, below). Twenty-one per cent of triage entries documented a heart rate, followed by BP (17.5 per cent), temperature (16.25 per cent), respiratory rate (13.75 per cent), and BGL (3.75 per cent).

[7] Pre-arrival information can be entered into the EDIS system by the call-taker. At the time of the patient's actual arrival and triage, the information is flagged as available for insertion when the patient's name, matching the pre-arrival information, is entered into the triage field. Once verified as matching, the information can be inserted into the triage. Though pre-arrival information can be used to populate the assessment field, it is not ideal practice to exclude nurse assessment from the data on arrival.

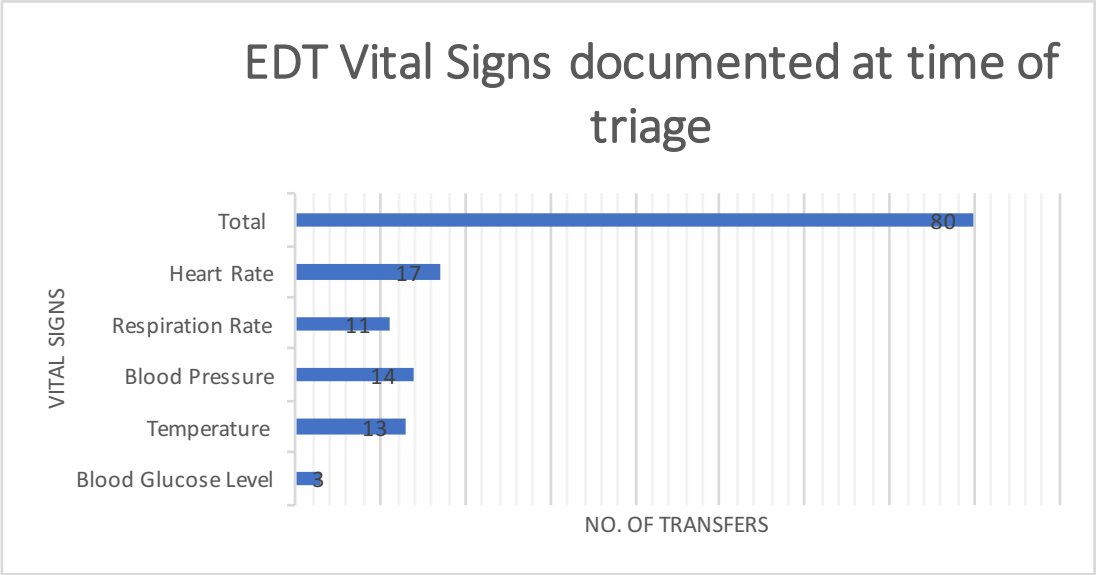

Figure 4.14: EDT vital signs recorded at triage

Gilboy et al. (2011) suggest that the set of vital signs taken at the time of triage may be the only set taken for patients presenting in lower triage categories. Yet patients triaged into lower categories are likely to experience increased rates of morbidity and mortality compared to those triaged into higher categories (Dent, Rofe & Sansom 1999). Additionally, and although this is under review, parameters for geriatric vital signs are not included in scales of assessment in the ATS (Department of Health and Ageing 2009). This suggests that the experience of the triage nurse, in conjunction with accurate taking, interpretation and recording of complete sets of vital signs at the time of arrival, is crucial for older persons who already have complex comorbidities.

Despite having complex comorbidities, and having been transferred, unaccompanied, by ambulance to the ED, not all residents were allocated directly to a bed following triage. Thirteen residents (16.25 per cent) were sent to the waiting room, and 45 residents (56.25 per cent) were ramped with the ambulance crew,[8]. Only 19 (23.75 per cent) were allocated directly to an ED cubicle. Data on the initial allocation were not found in three transfer episodes. Residents being sent to the waiting room raises speculation that the family members of residents were present in the ED, although not present for transfer, and were able to accompany the resident while they waited. Ramping suggests that residents were

[8] 'Ramping' is a term used to describe patients whom, after triage, remain in the care of the ambulance crew until such time as a cubicle becomes available. This is usually in the corridor, or somewhere close to the ED ambulance entry point (which often has a ramp).

not safe, or were otherwise too incapacitated to wait, unaccompanied or otherwise. Allocation to a bed suggests that triage staff's level of concern demanded a bed, or that a bed was coincidently possible at the time of arrival.

Following medical assessment and disposition planning, 35 residents departed to an RACF (43.75 per cent), one resident was admitted to the Emergency Medical Unit, and 43 residents were admitted to an inpatient ward (53.75 per cent). One resident died in the ED. The length of stay in ED varied from 28 minutes to over 30 hours (mean = 6.9 hours, rounded). It was not determined if transfer information influenced the time to disposition decision or departure from ED.

Summary

The main purposes of the EDIS triage document are to identify the patient and to highlight the most pressing single complaint for that patient, which is determined by clinical urgency (Department of Health and Ageing 2009). Like the e-PCR, the triage document is a departmentally standardised, generative document intended to elicit data in a socially accepted arrangement for emergency clinicians (Nicolini 2009; Prior 2003). That is, the EDIS triage document is designed for a highly specific purpose. Mandatory fields ensure the rules of triage data entry, where the patient's demographic is linked to a singular chief complaint, and any accompanying information married to numerical ATS categorisation is followed. However, the specificity of the triage document also conditions its authors to focus on triage-relevant information in their triage interactions (Giddens 1984). The requirement of author clinician identifiers suggests that their authorship makes triage decision-making auditable.

EDIS triage documents are designed for ED clinicians. Despite this, the document has attracted multiple readers, in part due to the auditability of its information. For example, scales of reference appropriate to geriatric presentations are not included in the ATS-specific Emergency Triage Education Kit (Department of Health and Ageing 2009). Therefore, documentation of clinical content on the triage document is based on experience and subjective interpretation of information, which is negotiated in reference to the chief complaint. This means that although triage authors are identifiable, auditability of the triage itself can only be subjectively determined. In contrast, time of triage and allocated triage category can be examined against the documented time taken for medical assessment. This capability has allowed audit of adherence to ATS time guidelines and to the more recent National Emergency Access Targets (Staib et al. 2016). Therefore, triage clinicians can expect to have information they document read by their peers, as well as by national auditors collating information on overall departmental performance.

Information in the triage document is produced to generate action within a given timeframe. That means that rather than being an inert record of events and actions prior to that point, information structured into the triage document requires action of its readers based on the ATS scale of urgency (Department of Health and Ageing 2009). As action is the intended outcome, the triage document's design necessarily features chief complaint and ATS numerical category. The structure of the EDIS triage document therefore represents as well as frames the social world of triage authors (Nicolini 2009; Prior 2003).

Triage is a process designed to identify the need for time-critical intervention (ACEM 2000), and thus space to document a time-critical scale of reference is formatted into the triage document. However, triage is not synonymous with complexity or severity (ACEM 2000, p. 2), which means that information extraneous to the function of triage is not incorporated into the triage document's structure. Thus, any physiological scales of reference that may be experientially applied in determination of a category of urgency, or supplementary to the triage, are not formatted into the document, and are only included at the author's discretion (Department of Health and Ageing 2009; Vance & Spirivulis 2005).

4.4 Non-material mnemonic tools: SBAR

The following section describes the extent to which transfer documentation contains elements of standardised information foci. Subsets of transfer information are highlighted by analysing the free-text written across transfer by clinicians from each of the organisational groups using a commonly accepted and recommended mnemonic: SBAR. SBAR is used across numerous health care settings (Blom et al. 2015; Panesar et al. 2016), and shares similarities with mnemonics with longer use histories, such as SOAP (Riesenberg, Leitzsch & Little 2009). The umbrella headings of SBAR aid information recall and facilitate completeness of handed-on information (Bonacum 2008; Stewart & Hand 2017). This study expected that the analyses of free-text narratives using SBAR would highlight consistent information foci across transfer, documented in a standardised format.

The mnemonic coding tool SBAR was applied to 199 free-text narratives written in the structured transfer artefacts of each group. Transfer entries in the initial data collection from RACF were documented on the resident's clinical progress notes. Transfer entries documented under 'other' on the YE were considered free-text and were also included. In order to analyse free-text narratives across transfer from the time of departure from the RACF and arrival at the ED, the free-text transfer entries documented in RACF clinical progress notes were included in SBAR analyses.

To account for information fluidity while also facilitating analyses, a range of specific transfer content from a number of authors (see Table 3.5, above) intended to aid coding under the umbrella headings of SBAR were defined, thereby providing *a posteriori* themes. The nuances of the focus of information were drawn out using SBAR and its sub-elements as the coding scheme.

A simple content count by frequency in each category found that the broad umbrella components S, B and A were information priorities for each group. However, the emphasis afforded to elements subsumed under each of those broad categories tended to differ. Seventy-nine per cent (rounded) of RACF narratives recorded sub-elements of 'Situation'. RACF narrations focused on the current problem, a reason for referral, and imminent concerns. RACF narrations did not prioritise urgency. Approximately half of all RACF narrations included 'Background' information. Of these, less than 50 per cent of RACF transfer narratives provided a history of the current problem. A clinical background or context was only identified in 45 per cent (rounded) of RACF narrations. Less than half incorporated a history of the current problem. Additional medical history information and a synopsis of treatment provided were only provided in 30 to 36 per cent of narrations. Assessment information was most commonly incorporated in the form of vital signs. Few RACF narrations postulated a cause for their concern or documented what they had done for the resident so far. Approximately 30 per cent included what they sought from receiving clinicians as a result of transfer. Eleven transfers from RACF to ED were carried out with an intention to access inpatient resources or specialist reviews. Specialist reasons for transfer were for personal device care (one), ophthalmology review (one), psychiatric assessment (one), palliative care review (one), and behaviour management (five). Thirty per cent made specific requests, while other 'Recommendations' were less precise. Of note is that RACF Transfer documentation was not concise, and at times details had to be gleaned from multiple readings. Thirty-six per cent of SBAR sub-element categories (relevant to and inclusive of reasons for transfer) were embedded in entries written across multiple progress-note pages, including separately dated entries.

With the exception of treatment synopsis and medical history, more than 70 per cent of sub-elements S, B and A were repeated in the e-PCR transfer narrative. All ambulance narrations included a provisional diagnosis, which identified a current primary problem. Approximately 95 per cent (rounded) identified a reason for transfer and or reiterated RACF concerns. Few (less than 10 per cent) identified the transfer to ED as urgent. Over 70 per cent documented the clinical background of the current problem, and over 90 per cent indicated its aggravating clinical history. However, less than half of all ambulance transfer

narrations documented relevant medical/surgical or social histories, or gave a synopsis of treatment prior to their involvement. Almost 85 per cent (rounded) documented vital signs in the free-text narratives, as well as in tabulated format. Over 70 per cent (rounded) documented their thoughts of potential causes of concern and what had been done by the attending ambulance crew during the call-out. Similarly to RACF, 'Recommendations', in terms of what was sought from others, were documented in approximately 30 per cent of narrations, 24 per cent (rounded) documented a specific request (e.g. radiography), while less than six per cent documented a specific referral or request for management plan.

All EDIS triage entries documented the current problem as the chief complaint. Over 80 per cent (rounded) documented a reason for referral or concerns expressed. Over 99 per cent (rounded) of triage entries documented urgency as an ATS category. However, one triage document was not scanned into the DMR. As no EDIS triage at the study hospital could be completed without an ATS categorisation, this figure can be considered 100 per cent. Free-text narratives under the heading 'nurse assessment' were brief, and tended to limit information to the primary complaint. Only 45 per cent incorporated the clinical background or context of the presenting problem, while almost 70 per cent (rounded) documented the history of the presenting problem. Medical, surgical and social histories were documented in less than 40 per cent of narrations, and less than 28 per cent (rounded) incorporated a synopsis or prior treatment provided by either RACF or ambulance. Vital Signs were the assessment element recorded most often (73.8 per cent). Few triage entries postulated a cause for the current problem or indicated what they had done so far. Note, though, that when patients are transferred for known inpatient assessment or specialist review, the triage nurse may contact the inpatient team to let them know of the patient's arrival, which is then documented as part of the triage. Aside from contacting relevant inpatient teams, triage nurses rarely have cause to provide a treatment during the triage (unless imminently required, such as the stemming of bleeding). Very few triage narrations documented what was being sought as a result of transfer, and only 2.5 per cent reiterated that a specific request had been made. Further, triage categories did not correlate with the number of sub-elements of SBAR for any group (p 0.093 to 0.954). The overall SBAR category by organisational group and sub-element is shown in Figure 4.15, below.

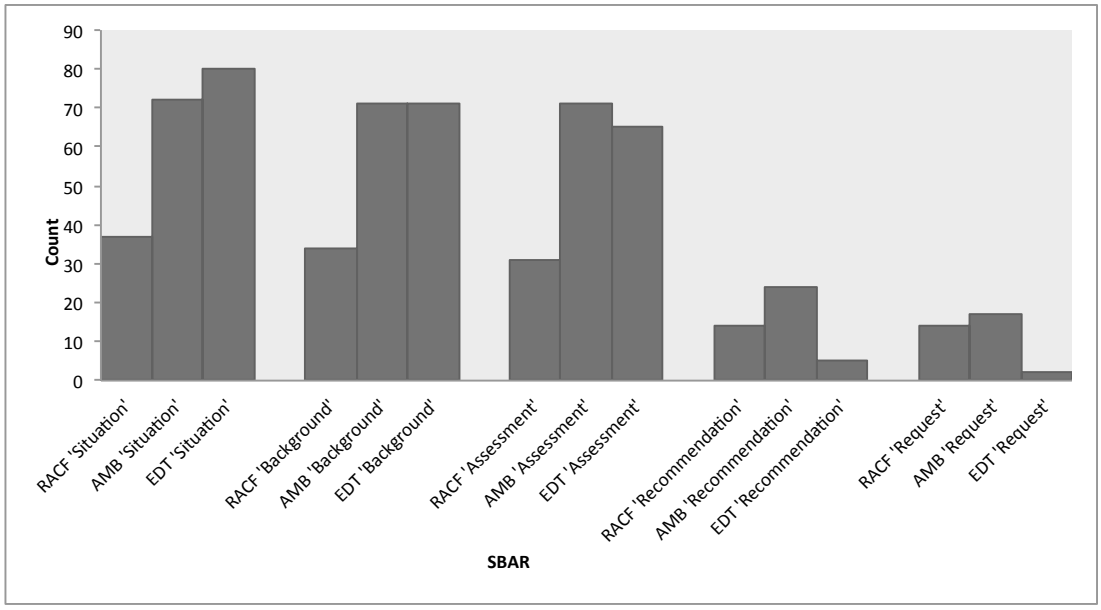

Figure 4.15: Overall use of the mnemonic SBAR per group

The figure above shows that SBAR categories S, B and A are prioritised in the transfer narratives of all three groups. 'Recommendations and/or Requests' are not prioritised, being included in approximately 30 per cent of RACF and ambulance narratives, and in only five per cent or less of EDIS triage narratives.

Table 4.2: SBAR sub-element inclusion by organisational group

Table 4: SBAR inclusions by organisation (valid percent)

SBAR	RACF	Ambulance	ED triage
Situation			
Current problem	78.7	100	100
Reason for referral	70.2	95.8	82.5
Concerns expressed	68.1	94.4	81.3
Identification of urgency	19.1	9.7	98.8
Background			
Clinical background/context	44.7	72.2	45
History of the current problem	48.9	90.3	68.8
Relevant medical/surgical or social history	31.9	47.9	40
Synopsis of previous treatment	36.2	48.6	27.5
Assessment			
Current vital signs or observations	48.9	84.7	73.8
What you think is possibly wrong	29.8	73.6	15
What you have done so far	34	73.6	18.8
Recommendation			
What was sought from others	29.8	29.2	5
For referral to others	6.4	5.6	1.3
For a management plan	2.1	5.6	0
For a specific request	30.4	23.6	2.5

Forty-three per cent (rounded) of RACF transfer narrations were likely to include three sub-elements of SBAR under the category 'Situation'. The ambulance included a minimum of three sub-elements of 'Situational information' in 82 per cent (rounded) of transfer

narrations. ED triage narrations were more likely than not to include all four sub-elements (68 per cent (rounded) of the time).

Of RACF entries, 16.3 per cent did not include ‘Background’ information. When included, the focus of this information tended to be the context or history of the current problem. Ambulance clinicians included ‘Background’ information inclusive of three or more sub-elements in 40 per cent of transfer entries. The least likely ‘Background’ information to be included was the relevant surgical or social history. Thirty-five per cent of ED triage narrations commonly included two ‘Background’ elements. The most commonly included sub-element was the history of the current problem. Eight triage narrations did not contain any ‘Background’ information. Nineteen per cent (rounded) of RACF narrations excluded ‘Assessment’ information. When included, the most common sub-element was vital signs. Ambulance narrations commonly included three ‘Assessment’ sub-elements. Vital signs were the most often documented, while explanations of what may be wrong and what has been done so far were equally well-documented. ED triage frequently only documented one sub-element of ‘Assessment’, which tended to be vital signs (57 per cent of triage narrations).

This study found that ‘Recommendations or Requests’ are the least forwarded type of information. Only four (five per cent) of triage narratives were identified as containing referral requests. Two simply recorded that a GP had advised RACF staff to transfer to ED. One explicitly and one implicitly communicating a GP’s request for an investigation. Two referenced concerns of the resident’s family (regarding the resident’s deterioration), and the other stated that the resident’s daughter was coming to the ED. Multiple Logistic Regression analyses found that RACF inclusion of ‘Recommendation or Request’ had no effect on its inclusion in the ED triage narrative ($p = 0.983$), but paramedic inclusion of ‘Recommendation or Request’ had a positive correlation with inclusion at ED triage ($p = 0.015$). The odds of triage *not* forwarding a ‘Recommendation or Request’ in the triage narration were 92.4 per cent. This suggests that ED triage either did not read RACF documentation, or that ED triage was more likely to reiterate information provided by paramedics than information provided by the RACF.

While the most frequent content in each transfer narrative centred on the current situation or event precipitating transfer, the sequences used to narrate information lacked uniformity. For example, RACF documentation ranged from simply stating the background event precipitating the call for an ambulance and a foregoing specific physiological concern or provision of additional information, to providing comprehensive information for each of the operational sub-elements of SBAR. Paramedics, on the other hand, prioritised ‘Background’

and ‘Assessment’ information while triage narrations prioritised ‘Assessment’. As none of the transfer forms or transfer narrations was electronically linked, a complete picture required the reading of all three documents.

Summary

Transfer narrations are focused transfer texts. At first glance, transfer narrations appear to be without the same limitations as those imposed by the structured labels of transfer documents. However, application of the SBAR mnemonic showed that narrations of transfer tend to be focused on relevant ‘Situational’, ‘Background’ and ‘Assessment’ information. The sub-element of urgency is missing from RACF and ambulance narrations, which is unsurprising, because defining urgency is not a specific function of either clinical role. For the same reason, ‘Recommendations’ tend not to be documented in triage narrations. However, it is worth noting that ‘Recommendations’ documented by ambulance clinicians are more likely to be included in triage narrations than those appearing in RACF documentation alone.

‘Situational’, ‘Background’ and ‘Assessment’ information documented by each of the groups of interest were similar, despite varying amounts of information being included under each heading. In addition, the sequence of documenting information for transfer did not lineally follow the order of SBAR. In practice, the written transfer narratives were malleable texts. Despite differences in the volume of information, the maintenance of focus of the narrative content on the transfer event is similar.

4.5 Chapter summary

Through a process of disassembly, this chapter has highlighted the construction of documents used for transfer from RACF, to ambulance, to the point of ED triage, and has shown how documents influence a number of communicative strategies for producers, and recipients, and the impact of this on those being communicated about. Documents are designed to generate information. The YE is essentially a list, therefore the purpose it serves is the collation of pre-existing information. Little or no new information is required of its authors, as the primary purpose of the YE is to help ensure that the right existing information is assembled and transferred to another organisational group, for the right resident. In contrast, the e-PCR is constructed to capture historical, current and extraneous information as a record of call-out event. It is also designed as a record that identifies clinical accountability, and facilitates numerous audits and financial reimbursement. The much shorter EDIS triage document is a record of presentation, and generates new, actionable

information. Primarily, the chief complaint is correlated with urgency, to identify a set point on a numerical scale that precipitates action.

Readership outside the clinical environment is designed into transfer documents. For example, the e-PCR and EDIS triage document facilitate audit of organisational and/or national standards (Australian Health Practitioner Regulation Agency 2017a). In contrast, no national standard for RACF-to-ED information transfer exists, and therefore neither the YE nor its collators can be audited against a compliance standard. Audit, however, suggests that information construction is subject to rules, and that rules, in turn, facilitate accessibility (Prior 2003). As it is well known that medical documentation is framed to a large extent in terms of liability, the e-PCR and EDIS triage document likely represent, and recursively are framed by, medico-legal cultures protective of clinical registration and against organisational litigation (HIROC 2012).

Application of the SBAR tool to the free-text showed that documentation in transfer narratives is a generative practice. While SBAR in its entirety, as outlined by the ACSQHC (2012b), was not routinely followed in this study, the results showed that information in keeping with the SBAR categories was documented. The emphasis on some sub-elements reflects the authors' organisational role and documentation objective. Context is therefore integral to relevance (Haslett 2013). A focus on 'Situation' sub-elements implies that this emphasis is the main precursor to action as it is cast from one organisation to the next, and that 'Background' and/or 'Assessment' information provide context. However, of particular interest to this study is the practice of building, or, in some cases, eliminating, information (i.e. 'Recommendations/Requests') ill-fitting the receiving document (i.e. EDIS triage document). The contextual goal of triage, combined with the specificity of the EDIS triage document dictate that 'Recommendations/Requests' are not a requirement of triage. Further, as the structure of VACIS highlighted, the e-PCR is not intended to be printed out at the time of triage, and the handover of 'Recommendation/Request' information at triage is necessarily reliant on verbal exchange. While the relevance of such information may be contingent on the reason for transfer, any expectation that the information will be carried forward is hampered by the structure of the EDIS triage document that dispenses with its necessity at that time.

Overall, the results discussed in this chapter confirm that tools used across transfer are contextually relevant to each site (Caldwell 2012). The three sources could be combined to generate a more comprehensive picture, and it is likely that if the tools were electronically linked this process would be simplified. However, as each tool is designed for transfer or creation of a case record, rather than for continuity, and as the accompanying RACF

documentation contained within the YE (though highly variable) is designed for RACF purposes, significant gaps in information for the residents would likely remain. According to Caldwell, Schatzki insists that ‘participation in a practice only takes on a determinate form as it happens’ (2012, p. 297). When applied to transfer documents, this notion implies that although the tools are reducible to their structure, the same does not necessarily apply to free-text narrations. With this in mind, the following chapter draws out practices of reference and normativity in the free-text and uncovers, quite simply, and at times paradoxically, how things are documented across transfer.

Chapter 5: Narrative practices across time and space

This chapter offers a series of qualitative findings enabled by the PT approach applied in this study to understanding references in transfer documentation by zooming in on doings and sayings in the free-text. That is, this chapter examines what clinicians are commenting on when they document. These qualitative findings are an alternative yet complementary interpretation to the countable elements of content and assessment of standardisation using a mnemonic provided in Chapter 4. Applying Nicolini's (2009) concept of zooming in on site-based socio-contextual practice, through the multivocal PT lens outlined in Chapter 3, the findings in this chapter highlight what other studies have steered away from when examining information transfer from RACF to ED. The findings highlight intersubjective contextual references to social practice embedded in transfer entries. Prior (2003) suggests that authors are very aware of future readers, and, whether subconsciously or not, this invisible, latent audience has an enormous impact on content and inference in free-text transfer narratives.

5.1 Introduction

This chapter presents the study's qualitative findings. The format of presentation maintains emphasis on common social practices identified within individual groups. Each section is summarised individually, and inclusively at the end of the chapter. The findings are supported and explained with the use of verbatim excerpts. The excerpts provide readers with an opportunity to understand practices as assemblages of information related to the site of origin and as reference for future readers. The excerpts contain numerous abbreviations and initialisms which are clarified in footnotes. Some transfer episodes could not be tracked in full across the groups of interest. This was attributed to data being missing from the DMR and/or to non-documentation of a narrative by a specific group of interest. Where possible, transfers of particular significance are tracked from their origin in the RACF, to the paramedic, and lastly to ED triage.

These findings have been made through application of a multivocal PT lens to the free-text narratives that commonly follow demographic information. RACF-to-ED via ambulance transfer information revolves around the interests of each group. Primarily, these key pieces of information are: the reason for concern, assessment, stabilisation treatment and transfer, and categorisation of urgency. It should be pointed out that each time information is documented, demographic information provides the common starting point. Demographic information includes the resident's name, gender, date of birth, and place of residence (note,

too, that a patient's residence is recorded immediately following triage in ED by clerical staff).

These findings show that the purpose of documentation is not only to transfer information on behalf of the resident. Authors document varied combinations of taken-for-granted assumptions, mutual, specific, and inferred information, the focus of which is determined as much by the design of documents as it is by clinical role and teleoaffective influence. As documentation is guided by the structure (or lack of structure) of documents, and is common to each of the organisations, succinctness, not comprehensiveness is a normative feature of transfer narratives. The differing focus of the information is dependent on the goals, aims or intentions of the authors. For example, although content and context are broadly determined by an author's clinical role relevant to the transfer event, justification of the actions taken to a prospective reader may exert a greater influence on what and how information is documented. The focus of information is shaped and re-shaped across transfer, and it tends to be deeply rooted in the context of the clinician's organisational role or intended outcome. These normative practices tend to generate information that is useful in its association with the short-term, but also ensures limited applicability to longer-term trajectory planning.

Legitimacy is a documentation priority, which aligns and overlaps with the medico-legal expectations governing bodies have over performance standards in practice. Therefore, the extent to which each group justifies an action is dependent on their knowledge of their obligations, and on practice standards enforced by sites.

The interpretation of how and when a *rule* is applied is subject to varied interpretation across organisations. Unless an authorising, but also socially applicable, caveat is applied, receiving clinicians are not obliged to follow the rules of non-affiliated organisations.

The fragmentation of health care services appears to have left a gap between the distinctly different RACF and ED levels of care. The findings of this study show that the ED was, at times, used as a bridge to access specialist services for RACF residents, and that ambulance services sometimes simply provided a mode of transport. Lastly, on several occasions, paramedics appeared to apply the SBAR format to document two different sets of information. In these cases, ambulance clinicians used SBAR to document the primary concern, which expedited transfer, and then reapplied the format to document comorbid and social information within the same narrative.

5.2 Production practices

Transfer information must, to a degree, make use of abbreviation and abstraction, otherwise it would be too cumbersome and time-consuming to create and read. Transferred information must also gather and pass on historical information, as well as be able to facilitate the creation of new and actionable information. Therefore, transfer information is enmeshed in a self-perpetuating circuit of production (Prior 2003). This section presents references to the practice of information production, interpretation, re-production and transformation based on mutual understandings, critical reflection and prediction drawn from the transfer narratives.

Mutual understandings

There is an expectation that particular kinds of service provided to RACF residents in EDs are the norm. In part, this is related to an acknowledged lack of GP access, difficulty with transport to outpatient services, and lack of resources in RACFs. RACF nurses, ambulance services and EDs all have significant knowledge in the physiological changes associated with ageing, and, therefore, a mutual awareness of common conditions. However, individuals, regardless of their age, have the potential to experience illness/injury outcomes differently. Putting too much emphasis on assumed mutual knowledge can potentially limit the content of transfer information and negatively affect the provision of health care.

Projective information assumptions

The following excerpts exemplify entries with similar brevity that assume a shared mutual understanding. The entries use declarative questions and problem statements that make use of common lexicons such as the question mark, and octothorpe (#) to imply, hint or query. The first example, given in its totality below, hints at the main problem, and, using the question mark, further implies that the resident requires investigation for a possible gastrointestinal bleed:

> ? GI [gastrointestinal] bleed (RACF Transfer 27).

The omitted information would be useful in guiding treatment, treatment expectations, and realistic projection of trajectory over time. For example, the missing information could include the resident's current state (e.g. the existence, onset or nature of pain, current bleeding, haemodynamic state), how it was noted (e.g. evident on toilet tissue, informed by resident, witnessed vomit), the potential source of GI bleed (haematemesis, known stomach ulcer,

diverticulitis, tumour, melaena, or post-surgical intervention), history (has it happened before?), or patient wishes (end-of-life plan).

In the example below, the reader can assume that there is simultaneous concern about a fracture and/or cerebral bleed due to head laceration, age and mechanism of injury with loss of consciousness:

> Fall and hit her head, altering conscious level (RACF Transfer 19).

The reader is not informed if the fall was witnessed or whether there was an identifiable contributor, i.e. mechanical fall (trip), episode of vertigo, shortness of breath, syncope, or chest pain. Neither is a baseline cognitive state for comparison documented.

Other RACF Transfer entries for injuries provided greater detail, and linked medical history with the current concern. The narrative below provides a perspective of the immediate background ('fall last night'), and ongoing concern ('bilateral shoulder pain'):

> Bilateral shoulder pain. hx of fall last night. else fine. examination: tenderness of abduction both shoulder. no swelling. Shoulder pain? # (RACF Transfer 29).[9]

The following entry expands on immediate background information ('fell in corridor') by referencing the patient's medical history (previous fractures and osteoporosis) relevant to the mechanism of injury. The requests for radiography and analgesia are not clearly stated, because the description and concern expressed, based on a common clinical understanding of the ageing process and medical history, sufficiently imply these needs. That is, a resident with a history of osteoporosis, who has had a fall and is experiencing ongoing pain, is likely to have a fracture and requires definitive assessment and treatment:

> Fell in corridor. Appeared to fall in alignment although complaining of severe leg pain not experienced previously. Due to history of fractures and osteoporosis and pain, transferred to hospital for further assessment (RACF Transfer 4).

The above examples demonstrate how RACF authors record information in a format that requires that readers have mutual knowledge. The type of information an assumption of mutuality enables is omission of otherwise important information for formulating an understanding of events, determining if different investigations are necessary, and trajectory

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[9] 'H/hx' stands for 'history'; '#' within transfer narrations is an abbreviation for 'fracture'

planning. That this type of entry is routine implies that common ground/mutual understandings are an acceptable means by which to rationalise an author's aims, or the goals of transfer (Van Leeuwen 2007, p. 101).

Documentation guidelines that build a clinical picture

While the above examples of RACF Transfer information were heavily reliant on mutuality, the following paramedic documentation is more specific. Paramedic entries consistently included the reason for call-out, the provisional diagnosis, listings of medications, allergies, and an overall case synopsis because the authors adhered to the structure of the VACIS-supported e-PCR. As our interest is in the transfer narrative, the listings of medications and allergies are not discussed.

Guided by various mnemonics, used singularly or in combination, the paramedic synopsis of the call-out event enables the reader to develop a mental picture of what happened, what else might be happening, and the current condition of the resident. Mnemonics were used consistently by paramedics, and these assisted in clearly identifying the main concern. For example, MIST: M prioritises the *mechanism* of injury; IS identifies the *injury*(s) *sustained*; and T is used to prompt handover of the *treatment* so far.

In the example below, the author presents a clinical picture of the known events along with other assessment data. After first documenting the provisional diagnosis of 'haematemesis', the background information explicitly includes the dark red vomitus observed earlier:

> Haematemesis: Pt is a 95yo female. […] Pt has experienced 3 episodes today of haematemesis said to be dark red in colour. […] Nursing staff have noticed a drop in BP. BP stable with AT. Pt tachy at 110, spo2 88 per cent RA. nil pain, nil obvious IV access. Pt transported to RHH for assessment (Ambulance Transfer 27).[10]

Also implied is that, in light of these assessment findings, IV access and administration of IV fluids would have been appropriate. However, by documenting that IV access was not easy, the author justifies not performing this action. Similar to RACF Transfer #27, above, the

[10] AT: Ambulance Tasmania; tachy refers to heart-rate; SpO2 refers to measure of oxygen saturation in the blood; RA: room air; IV: intravenous.

paramedic's synopsis does not provide clues as to the cause of the haematemesis, likely precipitators, or links to comorbid conditions.

Similarly, the following example gives a provisional diagnosis, followed by a synopsis detailing known events leading to the injury and current assessment findings. 'Situation', 'Background' and 'Assessment' data are constructed in the synopsis, and readers can observe that the focus of information is constrained to the immediate concern. In particular, unexpected findings such as differences in pupil reaction time and initial alteration in conscious state are highlighted:

> Head injury: […] found on floor at approx 0800 […] beside her bed. Small lac [laceration] to her right eyebrow blood loss 10-20 ml. Was conscious but drowsy? Inappropriate answers to nurses but appears to be orientated with us. Denies any pain no obvious deformities old skin tears. Her left pupil was enlarged and not reacting right pupil pinpoint not reacting (Ambulance Transfer 19).

The next example gives a provisional diagnosis, and then applies the MIST mnemonic (see Table 2.5: Common mnemonics in health care) to describe the mechanism of injury (walking; un-witnessed fall) assessment findings/injuries (right-sided injuries in detail), injury exclusions, and treatment so far (five minutes of penthrane and five mg of morphine).

> Closed fracture left shoulder/upper arm: [name] has been walking […] has had an unwitnessed fall. […] Appears to have fallen on to her right side causing injury to her left upper arm and pain to left NOF/hip. […] C/O pain to left shoulder, left humerus and left elbow. Also pain […] and shortening and lateral rotation to L) leg. Good movement to right leg […] and right arm. Nil obvious deformity to left shoulder/arm. Good relief from 5/60 use of penthrane and 5mg morphine […] (Ambulance Transfer 4).[11]

The content of information in these synopses has shown how mnemonics can assist in identifying a priority clinical concern and be used to focus the clinical picture around and in support of it. The documentation in each of the above synopses broadly complies with the Victorian Clinical-Approach-to-a-Patient guidelines in retrospectively justifying both action and non-action (Ambulance Victoria 2016), and suggests that relevant professional

[11] NOF: neck of femur; C/O: 'complaint/complaining of'; 5/60 indicates five of 60 minutes.

performance standards are an important feature of transfer documentation. It also demonstrates how mnemonics are tailored to fit the needs of a specialty through legitimising the inclusion of particular information fitting both clinical role and organisation-appropriate lenses.

In addition, a significant amount of information handed over from RACF nurses to paramedics appears to be verbal. The above RACF and ambulance entries document the same patient transfer episodes. When compared, the entries show that ambulance clinicians document more extensive background and historical information than RACF Transfer staff. Ambulance clinicians add assessment findings and treatments provided to generate a comprehensive synopsis of the transfer event. This finding demonstrates that transfer narratives are not framed by the same socially accepted standards.

Cherry-picking triage-relevant information

After receiving handover from the paramedic and undertaking an additional assessment, ED triage (EDT) defines a 'chief complaint' and correlates the information with an ATS urgency category. In the EDT entry below, the chief complaint, 'haematemesis', is supported by the history, specified as vomitus observed to be 'dark in colour'. The author elects haematemesis over a potentially viral gastrointestinal infection (evidenced by only one loose green stool) as triage should prioritise a singular chief complaint (Department of Health and Ageing 2009). Vital signs taken by paramedics are also included. Vital signs identify that the resident is mildly hypotensive and tachycardic, which justify the semi-urgent nature of the problem – given as ATS 3. The entry briefly includes the specific background to the problem, and the current assessment details:

> ATS 3 – Haematemesis: Witnessed by nursing staff described as dark in colour, x 1 loose green stool at NH. Drop in BP with TAS Palp sys stable BP 115 hr 110 afebrile nil vomiting with TAS (EDT Transfer 27).

The following example condenses RACF information 'fall and hit her head' (RACF Transfer 19) and 'Head Injury' (Ambulance Transfer 19) into a specific chief complaint, a 'Laceration' correlated with an ATS urgency category. Using an altered order of the MIST mnemonic, the author identifies the injury as a triage priority, then the mechanism and treatments provided. In assuming a mechanical cause for the fall, concern for an organic underlying problem is reduced. 'Fall from bed' indicates the height of the fall. The absence of other injuries being identified supports the laceration as the chief complaint. EDT omits other, potentially important information, such as the patient's brief alteration in conscious state at the time of

injury, and unequal pupils as documented in the paramedic entry, though it was not discernible if either observation had resolved at the time of triage:

> ATS 4 – Laceration R) eyebrow: Mechanical fall at 0800hrs. Fall from bed. Pt alert, orientated, nil slurred speech. [...] lethargy, denies pain. nil distress. walks with walker. Nil shortening or rotation of legs. Hard to assess. Recent right hip replacement. complaining (of) pain everywhere morphine with TAS (EDT Transfer 19).

Also using components of MIST, the triage entry below provides readers with the presumed mechanism ('unwitnessed fall'), obvious indicator of significant injury ('left hip shortened, rotated'), sites of pain ('left hip/shoulder'), and treatment so far:

> ATS 3 – Fall, painful left hip/shoulder: BIBA given 5mg morphine, methoxy, unwitnessed fall, Left hip shortened, rotated, from NH, Pat hx dementia (EDT Transfer 4).[12]

Application of select mnemonic components aids and constrains triage information, which is documented in support of a numerical code that equates to a category of urgency. Triage also provides a communication link with the internal ED (Health Policy Priorities Principal Committee – Report 2011, p. 68). One way the entries achieve this is by incorporating information relevant to resource allocation and to the planning of initial assessment pathways (Grouse et al. 2014; RO et al. 2015). For example, EDT 4, above, identifies that the patient has dementia. This indicates to the Registered Nurse in Charge of the shift that a cubicle in a lower traffic area is preferred, or that there is a potential need to arrange a family member or trained volunteer to sit with the resident if he or she is agitated (Carr 2013). Identifying a mechanical cause, and observations including shortening and rotation of limb, indicates the need for prompt musculoskeletal assessment and radiography. Identifying that the patient is from an RACF flags the need for discharge communication to determine whether return to the facility will be possible. This, in conjunction with the resident's age (which is automatically generated with entry of date-of-birth during triage), if over 65 years, prompts assessment by a multidisciplinary team comprised of an RN, a social worker, a physiotherapist, and an occupational therapist located in the study ED.

[12] BIBA: brought in by ambulance.

Summary

As demonstrated above, transfer documentation can take the form of a non-reflexive representation (of a task or a visual observation) that provides a 'taken for granted construction of reality' (Berger and Luckman 1967; Schutz and Luckman 1987, cited in Geiger 2009, p. 135), or it can be a construction which aims to clarify and contrast information in support of its validity (Geiger 2010). Communication reliant on mutual understanding is a risk because it assumes a particular audience, leading to the content of the information being either too specific or too limited. Communication carries with it 'unspoken, tacit aspects of knowledge and meaning' (Geiger 2010, p. 294) where, in order to understand each other, senders and recipients must rely on some similarity in their knowledge (Raczaszek-Leonardi, Debska & Sochanowicz 2014). However, relying on mutual understandings in communication is a practice that, according to Geiger's interpretation of Habermas' theory of communicative action, is an often-accepted, validated and institutionalised method of documentation (Geiger 2010). The latter, argumentative form of documenting explicitly identifies tasks and outcomes in a discursive, rather than narrative format (Geiger 2009). This method of documenting tends to substantiate or justify transfer through assessments, treatments provided, and treatment outcomes. This study found that transfer documentation guidelines (or the lack thereof) shaped the production of transfer information. Lack of guidelines led to the generation of variable documentation practices in RACF progress notes. While specific mnemonic documentation practices generated role-specific documentation practices in the context of a particular task.

Critical reflection

This section reveals how situated knowledge, and, by association, the focus of the transfer narrative is shaped and contextualised by different organisational groups with different socio-contextually motivated actions. It also highlights documentation challenges in aligning some resource-related transfer circumstances to acute-physiology-oriented document structures.

Validating the necessity of transfer

As shown above, RACF Transfer documentation was written in a variety of formats with none isolated to a particular type of transfer. Typically, the narrative for musculoskeletal injury began with a problem statement, i.e. 'Fall on floor' (RACF Transfer 40). With only these three words forming the entirety of the transfer entry, any additional information is

implicit. That is, the potential for injury and warrant for investigation is implied by virtue of stating the mechanism.

However, increasingly complex issues incorporated both narration and argument styles of documentation. The most inclusive were for transfers that took place after attempting alternative care advice, and/or exhausting other options:

> Reviewed patient, both legs oedematous, Right leg red and quite warm to touch. Left leg not red. […] pain 8 out of 10. Apparently, resident had 8 tablets of panadol in the last 10 hours, as resident is self-medicating. Rung her GP […] is overseas for holidays. Patient doesn't mind going to hospital for immediate attention, A non-emergency ambulance has been booked and awaiting transfer (RACF Transfer 33).

RACF Transfer 33 works through the decision-making process from problem identification to transfer. The author avoids making a specific claim about the resident's legs and instead provides an overview of a progression of events supported with the warrant 'oedematous and red' and further backing 'pain'. The entry then shifts to a narrative, describing the consumption of Panadol over time, contextual information including unavailability of the resident's GP, and then to the resident's disposition that she 'doesn't mind' going to hospital. The outcome is documented, too: arranging a non-emergency ambulance. The combination of narrative and argument focuses on a specific task (review of the resident) and method to achieve that goal (non-emergency ambulance).

Critical reflection and application of narration and argument documentation styles were found in transfer entries detailing prior unsuccessful attempts at interventions or treatments for some transfers. The excerpt below describes the challenges in attempts to manage a resident with dementia, who was returned to RACF care following discharge from hospital:

> We did not expect to receive [name] back today. She is again experiencing at risk behaviours. The room she has is not secure and it is placing her and our staff at risk. […] We have trialled [name] in the secure area, which is on the second floor and she has tried to jump off the balcony. In response, we have been providing 1:1 care, and this has been unsuccessful. […] We cannot accommodate this patient in the secure area at night, as we have no available beds. The patient requires care that is beyond the scope of the area she has been accepted into. Thank you for accepting this patient (RACF Transfer 8).

RACF Transfer 8 makes the *claim*: accept this patient on the *validity* grounds that 'the patient requires care beyond the scope of the area she has been accepted into'. *Supporting data* are provided: 'she is experiencing at risk behaviours'. A further *warrant* is documented: 'the room she has is not secure'. Further, a *backing* supports the warrant: 'she has tried to jump off the balcony'. The author critically applies a *rebuttal* to any potential query that care may be continued under a specific circumstance: 'We have been providing 1:1 care that has been unsuccessful'. Lastly, supporting data for the overarching claim, based on lack of resources is documented: 'we cannot accommodate this patient in the secure area', with the *warrant*: 'we have no available beds'. The safety concern and lack of appropriate resources are made explicit.

Transfer documentation to enable access to specialist resources was also written using combinations of narration and argument:

> [Name] complaining of extreme pain in right leg, is confused, at risk of fallout of chair/bed. Prn endone has been given regularly with very limited effect. Spoke to Dr [name] who advised: he has been unable to get results back from hospital/oncologist – as pain is uncontrollable […] needs an urgent review […] as condition has deteriorated so quickly […] needs palliative review. [Patient name] needs admitted to the palliative care ward, properly evaluated and management plans established before returning to the aged care facility (RACF Transfer 1).[13]

The overall *claim* is that the resident needs ward admission, 'proper' evaluation, and establishment of management plans. The author provides *supporting data*: uncontrollable leg pain, and a *backing*: ineffective endone (analgesia). A rebuttal to alternative avenues of care is given: 'already seen by Dr and oncologist'. A *qualifier*: rapid deterioration has occurred prior to getting results back. A *backing* is added: 'extreme pain; is confused, and at risk of fall'; and a *validity claim*: 'needs palliative care review'.

These entries show that validity claims are an important component in RACF Transfer documentation when on-site GP visits are difficult, and when alternative care management methods have been unsuccessful. Authors are more likely to include specific, critical information using narration and argument when the aim of transfer is to access inpatient or

[13] 'Prn' is an abbreviation of the Latin '*pro re nata*', meaning 'when necessary' (MedicineNet.com: https://www.medicinenet.com/script/main/art.asp?articlekey=8309).

specialist resources. Clearly contrasting the former entries reliant on taken-for-granted mutual assumptions, these entries are critically reflective. Elements of SBAR are woven in to the narrative using narration and argument in order to define, support, and, as a result, validate claims, tailored to achieving a desired outcome.

Validating the provisional diagnosis: A comprehensive clinical picture

Paramedics used narration to tell the story of the call-out event, and argumentation to *warrant* and *justify* assessment(s), treatment(s) and provisional diagnosis. The excerpt below is written using a combination of argumentation and narrative. It begins by stating the *claim*, which is the provisional diagnosis:

> Pain: Anxiety; closed fracture:

A *background* to the event is then narrated:

> […] Nursing staff state pt fell out of her bed at approximately 0145 am this am. Staff immediately heard pt calling out… […] Pt in no pain until she was lifted back onto her bed [...]

The entry then *validates* the claim of anxiety and uses a qualifier to validate potential for closed fracture:

> […] looking pink and well perfused, hyperventilating and anxious +++.
>
> Pt C/O pain 'everywhere', no specific location able to be identified […] nil worsening of pain on palpation of hips - pt has had recent R NOF, however slight shortening of R leg […]

The author then makes another claim: ‘No other problems identified’, which is verified by measurable data such as GCS and vital signs, and by RACF tacit knowledge:.

> […] Nil known LOC. GCS 15 (pt does have dementia however staff state pt acting normal) …
>
> […] HR 62, BP 155/82, BSL 5.1, ECG: NSR, speech normal, PEARL. Nil neck pain/tenderness on palpation, both pedal pulses present, cap refill < 2 sec all toes.

The documentation identifies other specific concerns and validates the reasons treatment was or was not provided:

> […] Pt had noticeable skin tears to R) elbow and R leg/knee which they had bandaged prior to AT (Ambulance Tasmania) arrival…
>
> […] IV access established 22g R hand […], total of 5mg Morphine given IV for pain (2.5mg, 2.5mg) […]

The entry then switches to narrative format for the final conclusion, stating that the resident has been taken to hospital:

> […] for further assessment. Pt calm and stable during transport (Ambulance Transfer 40).[14]

In contrast, other entries in transfer-only episodes of care provided less detailed information. In the excerpt below, the entry begins with the provisional diagnosis before switching to a narrative of the reason for call-out. The paramedics own assessment is not documented:

> Cellulitis: This lady was reviewed by RN at NH this morning and found to have swollen legs and c/o pain. She stated that she had taken 8 panadol in the last 10 hours with little relief. GP on holidays, ? OS. Transferred to RHH for assessment no care or treatment required (Ambulance Transfer 33).

However, other transfer-only entries were equally as likely to use narration and argument reiterated from RACF handover to support their provisional diagnoses and secondary claims:

> Confusion: Dementia care patient. Patient placed in respite care. Care staff state episodes of verbal and physical aggression toward staff. Care staff also state pt tried to jump off the upper floor balcony and is of risk to herself. Pt was recently seen at RHH but discharged back into the care of (RACF name). Nursing notes enclosed…

The author then makes the claim 'nil obvious injury or complaint', and, using argumentation, documents nil adverse findings resulting from the physical examination:

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[14] LOC: level of consciousness; HR: heart rate; BSL: blood sugar level (note, may also use BGL: blood glucose level); ECG: electrocardiograph; NSR: normal sinus rhythm; PEARL: pupils equal and reactive to light.

> […] O/E patient alert but confused. Pink and perfused. Talking in clear sentences. Nil obvious injury or complaint. Bilateral air entry – clear. Abdo soft. Normal food and fluid intake. Normal range of movement. No obvious weaknesses. No sign of aggression with the ambulance crew […] (Ambulance Transfer 8).[15]

Although the claim 'confusion' is partially supported by narrating descriptions of the resident's behaviour, an alternative is that paramedics found it difficult to align a non-acute illness or injury-related provisional diagnosis. That is, a resource transfer lacks 'fit' with the e-PCR. Selecting a medical issue is more in keeping with the context of the options available in the VACIS. Paramedics have the option of selecting a 'transport only required' option in the 'provisional diagnosis' section of the e-PCR. However, as one senior intensive care paramedic who was questioned opportunistically regarding the use of this offered 'it would be a brave paramedic who chose that' (Ambulance Tasmania paramedic, June 2016).

The narratives above highlight that validity claims in the e-PCR are closely associated with the performance of a role (Bystrom & Lloyd 2012). Like RACF authors, paramedics document specific, critical information using narration and argument. However, unlike RACF entries, which justified claims against resources, ambulance authors validated their clinical interpretations and justification of (non-)treatments, implying a link between validation and competence in performing a role. As signing the e-PCR is also a documentation requirement, the act of signing combined with the narrative synopsis of the call-out event facilitates accountability, peer assessment, and audit (Gheradi & Landri 2014). In particular, Ambulance Transfer 8 documents a resource-related reason for call-out, but then continues to document clinical assessment. This finding supports the suggestion that, although an available option in the e-PCR, documenting 'transport only required' would be a brave choice in practice.

Validating category of urgency and chief complaint

Triage authors documented the main problem/claim as the 'chief complaint', and provided an ATS category. This information was supported with argumentation, and, to a lesser extent, with narrative. As shown in the example below, use of implicit information requiring a mutual understanding was common:

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[15] O/E: on examination.

> ATS 3 – Pain post fall: Hard to assess. Recent right hip replacement complaining pain everywhere morphine with TAS (EDT Transfer 40).

Following the ATS category, this triage document records the main claim ('pain'), as the chief complaint, followed by supporting information ('post fall'). The claim takes the knowledge of its intended audience for granted and assumes the reader's mutual understanding of the potential for fractures following falls in the elderly. The combination of the mechanism ('fall'), and identification of pain despite the administration of opiate analgesia en route is sufficient to establish and validate urgency. Switching to an unsupported narrative, the author states that the resident is 'hard to assess', but also implies cause for concern by reiterating information from the ambulance handover of a previous hip replacement. The author omits supporting information by not forwarding the information that the ambulance had positively identified observable right-sided injuries.

The triage entry below makes the claim 'red lower legs' with the warrant 'bilateral lower leg swelling and redness'. The entry switches to a narrative format, stating what the patient did, 'refusing to give information', and that the person is able to stand. The entry then switches back to an argumentation format, making the claim that the patient is 'SOB' (short of breath), warranted by the finding of decreased oxygen saturations made during triage assessment. What remains implicit are the links the triage nurse has made between the bilateral lower leg swelling, reduced oxygenation, and shortness of breath. While the main claim, or chief complaint, appears to have been guided by the RACF and paramedic concerns, the link made by the ED triage author suggests that impaired cardiac function may be the more urgent problem, justifying an ATS category of 3:

> ATS 3 – Red lower legs: Bilateral lower leg swelling and redness. Patient refusing to give any information to triage. NH patient, stood on transfer with TAS. Patient SOB and decreased Sats on arrival (EDT Transfer 33).

The following entry uses the residents' medical history to support the chief complaint. It implies aggression is a known challenging behaviour exhibited by some people living with dementia (AIHW 2012a). When notification of a pending transfer is received by ED and entered into the EDIS system, a pre-arrival field of basic information can be generated. 'Patient expect' information is then populated from the pre-arrival interface to the triage interface on accurate entry of the patient's name, date of birth, and confirmation of the details on commencement of the triage:

> ATS 3 – Dementia/aggression: Patient expect: call from Nurse practitioner. Increasing dementia aggressiveness in pt. […] unable to cope with increasing aggression […]) Triage addition: Pt has been coop with ambulance (EDT Transfer 8).

The only assessment information added to the narrative by the triage author suggests that the resident was not aggressive during transfer or on arrival. As the prior notification has *authorised* the transfer, no further warrant of the chief complaint is necessary. 'Patient expect' information indicates to the triage nurse that either the nurse in charge of the shift, or the medical coordinator has received a call from the RACF and been informed of the details, and that the main concern has already been identified. ATS category is potentially based on the handover descriptor, as behaviour challenges at the time of triage are not mentioned. No mention is made, either, of the clinical and built environment resource challenges experienced by the RACF (Transfer 8).

Summary

Most often, validation of the main goal or physiological concern oriented the construction of transfer entries. Justifying the transfer, assessment, treatment, or triage with validity claims made with factual, observable, and sometimes implicit, information legitimated tasks that were being undertaken. While validity claims all represented the resident, each group tailored them to fit with the function of their own particular organisation, which suggests that authors of transfer documents critically reflect on information available to them through the lens of their particular role. This finding supports Schatzki's theory of site, and that situated knowledge is shaped and contextualised by groups of people and their socially motivated action through a nexus of action and teleological structure (Lloyd 2010; Schatzki 2005b). For example, validity claims made in RACF narratives justified transfer by highlighting the appropriateness (or lack thereof) of access to resources. To relieve the stress on stretched resources, or to aid treatment by accessing more acute clinical resources, the goal of the RACF was to justify and expedite transfer. Clinical assessment findings validated action or non-action in e-PCR transfer narratives. In order to justify providing a treatment, or non-treatment, paramedic authors documented clinical findings. ED triage entries tended to interpret clinical information in order to validate the allocated ATS category. More broadly, the overall findings highlight some of the challenges experienced by paramedic and ED triage authors in aligning a built resource-related transfer to a physiologically-oriented e-PCR and triage document. This latter finding highlights that for information to mean something to authors, it has to be contextually related to social expectations, in spite of the availability of alternative material drop-down menu options as in Transfer 8 (Lloyd 2010).

Prediction

Attempts to anticipate and predict the information future readers might require are woven into the transfer narratives. For example, if a resident is likely to require analgesia for ongoing pain, it makes sense from a safety perspective to advise receiving clinicians of the time, type, dosage, and effectiveness of analgesia already administered. Based on Schatzki's (2005a) 'practical intelligibility', this kind of information is distinct from tacit information, as it consists of what it makes sense for an actor to add into transfer documentation.

Anticipating adverse events

RACF entries appeared to predict information likely to be needed for immediate management. Characteristically, this information appeared in the last sentence(s) of transfer documentation, like an addendum. The following excerpt, for example, is from a series of progress note entries documenting a resident's unwitnessed fall and subsequent head laceration. In the context of the injury, the author predicts the resident may require sedation for suturing and is at risk of aspiration, and therefore documents the last time of food/fluid intake:

> 1910 hrs: PERRL, BP 130/76, HR 85, Spo2 97 per cent, RR19. Alert and able to answer and follow instructions given time. […] Dr (name) returned call and have advised to take (name) to hospital. Ambulance called […] *Last food and fluids at 1815hrs* (RACF Transfer 16, emphasis added).

Also concerned with the risk of aspiration in the unconscious resident, the following example shows anticipation of the query from future readers, and consequently adds the last time of oral intake:

> [name] showered and while sitting on bed @ 0745 went rigid, shaking while falling on the floor, unresponsive to verbal stimuli. BP 133/61, p 89, T 35.5, R 18 sats 94%, *nil food or fluid intake as yet this morning*. Breathing laboured, positioned on side […] (RACF Transfer 17, emphasis added).

Finally, in this last example, a resident is being transferred to hospital for further investigation and management of pain. A change in allergy status is highlighted as the author predicts its relevance to managing care and preventing an adverse event:

> Fall at 2030 hours on Friday […] increasing pain in lower central back since fall. […] Movement now limited, but can move lower limbs, can weight bear. GP assist (Dr name) feels further assessment is warranted. […] (*Please note: [name] allergy status has changed – allergies to penicillin and panadeine*) (RACF Transfer 20, emphasis added).

Embedded within the main transfer of RACF text, these small pieces of information share knowledge that is not part of general transfer mnemonics but is immensely important information for receiving clinicians to be aware of in short-term management. Anticipation of an adverse event may increase the likelihood of transfer documentation being written with the purpose of preventing the event or alleviating a future concern of the receiving clinician.

Clues for problem-solving and cautions for care

Specific information was documented by paramedics related to where to look for injury (especially important in cognitively impaired residents) pending management, decision-making, and potential to mitigate risk on entering the ED environment.

Documented for a resident with dementia, the description below provides the ED with information on the location of injury/ies, and where further investigations might be directed based on background information:

> Closed fracture left shoulder/upper arm: [name] has been walking in the nursing home when she has had an unwitnessed fall. Fell near the wall. Appears to have fallen on to her right side causing injury to her left upper arm and pain to left NOF/hip. On AT arrival Pt supine C/O pain to left shoulder, left humerous [sic] and left elbow. Also pain to left hip region with shortening and lateral rotation of leg. Good movement to right arm. Nil obvious deformity to left shoulder/arm […] (Ambulance Transfer 56).

Though not frequently documented, acknowledgement of Not for Resuscitation (NFR) orders passed on particularly important decision-making information. Below, the information justifies decisions made by the paramedic in attendance. It also informs ED of the availability (or not) of the NFR for later management:

> […] GP contacted via mobile, next of kin is 96yr, interstate and poor hearing over the phone, so difficulty palliating patient. No NFR order. Advised to take pt to RHH for possible x-ray and pain relief, before returning to nursing home. GP and

> NH staff aware of the plan to make patient as comfortable as possible (Ambulance Transfer 68).

> […] Patient transported to RHH. NFR sited and copy taken with nursing notes (Ambulance Transfer 24).

Cautionary and safety information were also embedded in paramedic entries. These entries provided specific information on medication, which, if they were to be double dosed, would have significant potential for harm. Other information included mobility and risk of absconding:

> […] has already been given her nightly 40 units of insulin […] (Ambulance Transfer 12).

> […] Care staff state patient is a risk of absconding if left alone […] (Ambulance Transfer 8).

> […] Patient was able to stand with assistance to transfer to our stretcher but was unsteady +++ (Ambulance Transfer 50).

Ambulance narratives are governed by the requirements of the ambulance organisation. Broadly, what matters to ambulance organisations, and, by association, to paramedics, is safety, assessment, treatment, and the avoidance of harm. Therefore, it is not surprising that narratives tend to be arranged along the lines of clinical approach-to-a-patient guidelines that ambulance organisations endorse (Ambulance Victoria 2016). Schatzki's 'practical intelligibility' is a concept governed by what a group or person determines as an end, and by what matters. Schatzki warns that practical intelligibility is not the same as rationalisation, but also states that the two features can overlap (Schatzki, Knorr Cetina & von Savigny 2001, pp. 55-61). The above narratives show that e-PCR narratives provide problem-solving cues, and, like the RACF entries above, information intended to avoid harm. Problem-solving cues tend to be embedded in the documentation of Situation and Background information. However, this kind of risk information is not specifically structured into mnemonics or the VACIS interface (Ambulance Victoria 2016). This suggests that avoidance of harm matters to paramedics, and it is therefore included in transfer narrations as a socially accepted practice. That each type of information is mutually beneficial to the receiving ED clinicians is an added bonus.

Red flags and internal-communication

Receiving a resident from RACF to EDT requires construction of information from multiple sources, such as RACF documents, verbal handover from paramedics, and assessments made by the triage nurse, the resident, as well as from 'expects' entries. The information is interpreted for the purpose of identifying and categorising urgency and identifying the 'chief complaint'. In addition to producing a textual account, a category from the ATS numerical scale is ascribed. To re-cap, the ATS is a standardised, five-tier numerical scale designed to prioritise urgency through consistent application of clinical criteria to patients arriving in EDs (Australian Government 2009). As each number on the scale corresponds with timed measures of urgency (1 = immediate, 2 = 10 minutes, 3 = half an hour, 4 = 1 hour, 5 = 2 hours), triage shapes the arriving patient's ED trajectory. Accordingly, triage narratives are aligned with the chief complaint and ATS urgency category.

In the example below, 'ATS 3' indicates that the patient should wait no longer than half an hour to be seen by a doctor, and the accompanying narrative supports the chief complaint: 'febrile'. The entry notes vital signs *had* been suggestive of sepsis, which would require allocation of ATS 2 (10 minutes) according to Australian College of Emergency Medicine guidelines (ACEM 2000). Therefore, a patient that meets sepsis criteria is a triage red flag for urgent medical review:

> ATS 3 – Febrile: Tachycardic, febrile, pain on PU, urine oderous [sic], dementia, AF on warfarin, BP ?? 80/sys but now 140/ without IV fluids (EDT Transfer 76).

However, an ATS category of 3 is justified by documentation of an acceptable blood pressure at the time of triage, obtained without pre-arrival intervention. By documenting the previous adventitious vital signs and potential foci of infection ('pain on PU' (passing urine)), the triage author is acknowledging a potential for deterioration, and signalling this to the internal RN in Charge and Medical Officer in Charge of the ED, who, on reading the triage of the internal system interface, and in sharing the same mental model as the triage nurse, are alerted to the same:

> ATS 3 – Resolving dysphagia, L) sided weakness. From NH – Onset symptoms this am 0730 – altered conscious state, appears alert and able to converse at triage, GCS 15. Old R) sided weakness from previous stroke? weak grip strength in L) arm. Has IDC insitu. Hx TIAs, CVA (EDT Transfer 60).

In addition to category of urgency and time to be seen, the above entry establishes timeframe as a reference for treatment possibilities; this is because treatment options for

stroke are time sensitive (National Stroke Foundation 2010). Therefore, in addition to the physiological condition of the patient, allocation of ATS must also take the time of symptom onset into consideration (Royal Hobart Hospital 2015). This triage took place hours after the identified onset of symptoms. By noting the time of symptom onset, prior and current neurological baseline, old and new neurological changes, and prior history, the author rationalises an ATS 3 categorisation. In terms of resources, rationalisation of ATS 3 shifts the focus to symptom management rather than time-imperative treatment (National Stroke Foundation 2010). The follow-on effect influences where the resident is managed (ED cubicles or resuscitation bay), suggests who the primary ED doctor managing the patient will be (i.e. intern or above), the urgency of medical review (10 minutes or half an hour) and investigative scanning, and inpatient referral to the stroke unit.

Triage information frequently included medications given prior to arrival. Clearly identifying medications had a number of potential aims, such as: 1) preventing overdose, 2) highlighting to the receiving clinician that effect could be monitored for before seeking further analgesia, or 3) highlighting that many of the medications were opiate-based, enabled monitoring for changes in the resident's cognition and/or safety in terms of increased fall risk. The following excerpts show how medication information was documented in triage narratives:

> […] Given sub cut morphine at NH. Penthrane with TAS Hx Dementia […] (EDT Transfer 11).

> […] *Given endone & oxazepam prior to arrival*) Fall 6/7 ago. New incontinence. No shortening or rotation (EDT Transfer 41, emphasis added).

This information was potentially useful to the RN in charge of the shift, as it alluded to the need to place the patient in a highly visible area, and to source a low bed or single room.

Triage entries, in their entirety, provide a range of communication features, in addition to identifying the chief complaint and ATS category. Information relates to clinical and physical resources inside the ED, and to the prevention of harm to the patient. The above documentation practices highlight connections between the actions of the triage nurse, the site layout, knowledge of how the site functions, and actions that will likely occur (Schatzki, Knorr Cetina & von Savigny 2001).

Section summary

Authors in each of the three groups signpost information to receivers. This information tends to be for immediate management and care. The information added is dependent on clinical

role, an assumption of what will occur, and on prediction of immediate resources in terms of staff, assessment requirements, treatment options and physical location. Documentation intended to promote safety and prevent harm is common to each group. This information is intended to guide action based on a shared understanding of risk. Both types of information require a shared understanding of clinical roles, work-task obligations, and organisational functions. The difference is that information oriented towards an end is embedded throughout the transfer narrative and can be rationalised by considering the clinician's task in transfer. Information that provides continuity and safety is prioritised in triage narrations and largely addended in the last one to two words or lines in RACF and e-PCR narrations. This finding may be because triage entries are short, though it also suggests that information intended to promote continuity and safety is discretionary and secondary to the main reason for transfer.

5.3 Embedded legitimacy

The findings below highlight the differing foci of referential practices produced for transfer within the conceptual frameworks of individual sites.

Peer authorisation

Legitimation for transfer that was based on the authority of a peer was featured in more than one quarter of RACF Transfer entries. For example, transfer to ED was enacted despite an entry in which the author simply wrote 'Doctor's Directive' (RACF Transfer 38), leaving out *any* additional information. This entry demonstrates how, in the form of authorisation from a doctor, even when not specifically identified (i.e. GP, locum, specialist, practice or name, etc.), hierarchical power relationships in health care are transferrable across organisations (Svensson 1996). However, more commonly the text included conjunctive statements referencing contact with the doctor to authorise the transfer:

> […] Seen by Doctor, antibiotic ordered QID for probable UTI // if unable to ingest adequate fluids* does not respond to antibiotic he is to be transferred to hospital […] (RACF Transfer 10).

> Doctor returned call and have advised to take [patient name] to hospital (RACF Transfer 16).

> Dec[reased] Hb [haemoglobin] to 70. GP request transfer to hospital ?? for transfusion (RACF Transfer 25).

Other peers authorising transfer to ED from RACF were identified as Nurse Practitioners (NPs) and the RN in Charge (RNIC) of the facility:

> […] After consultation with RNIC [name], decision made to transfer [patient name] to hospital for further review […] (RACF Transfer 15).

> […] The NP has again stated that our facility is not suitable, and she needs transfer to hospital […] (RACF Transfer 8).

Similar patterns of authorisation were echoed in other RACF Transfer entries. The following excerpt states how the author came to be notified of the problem (via the resident's daughter), what the problem was (difficulty breathing), who was notified (RN), and the action taken (oxygen given):

> Alerted by (daughter) that (resident name) unable to breathe. RN notified oxygen 2lt put on […]

The same transfer entry continues by documenting further assessment ('clammy', attempt at taking blood pressure), who was informed (GP contacted), the action taken ('ambulance called'), and permission for the action ('as per GP'):

> […] Unable to get BP as (name) very distress[ed] and thrashing about. Very clammy to touch. GP contacted, and ambulance called as per GP (RACF Transfer 35).

In narrating a sequence of events, the author told a story rationalising transfer to the ED. The authorisation of the GP ultimately legitimises the need for acute assessment rather than reliance on the described clinical condition or concern of the family member. A similarly detailed account of events ending in documentation of authorisation to transfer the resident to ED is repeated here:

> Resident complained [of] discomfort in abdo (bladder), flushed without success, changed catheter, still not draining, manager contacted & consulted […] advised to contact after hours GP, DR has contacted and informed, had permission to transfer to hospital. Ambulance contacted, and resident transferred to hospital (RACF Transfer 28).

Peer authority is highlighted in the above RACF Transfer entries. The narratives show that peer authorisations are used in the RACF environment to reify, and thus legitimate, the need

for transfer. The authority vested in the GP or NP takes precedence over a role for the RACF in the transfer-decision-making process.

Self-authorisation

Given that transfer to medical assessment is a recognised role of an ambulance service, authority to transfer is implied by the role itself (Eburn & Bendall 2010). However, by documenting a provisional diagnosis with a supporting narrative, e-PCR entries evidenced, and justified transfer based on background and historical information, clinical assessment findings and treatment outcomes.

For example, following the provisional diagnosis and background of call-out, the narrative below documents the presence or absence of clinical signs and symptoms, and the effectiveness of any treatments. This information supports the acuity of the condition, and thus the need for medical assessment. Recursively, the information supports the provisional diagnosis and justification for transfer:

> LUQ Abdominal pain: [patient] experiencing left upper quadrant pain […] grabbing left side, […] grimacing in pain 10/10, sharp and intermittent. […] Lungs sound clear, SPO2 83% on RA, dry mucosa ++. Pt given 45 mcg of IV fentanyl, reduced occurrence and severity of intermittent pain. […] given IV fluid therapy and oxygen. Pt transported to hospital (Ambulance Transfer 2).

The example below demonstrates how some clinical findings are prioritised over others and justify urgent need for transfer and medical review. The provisional diagnosis is documented as chest pain rather than chest infection, despite evidence (bi-basal lung field crepitations, cough and yellow sputum) of infection:

> Chest pain: […] Onset central/left chest pain radiating through to her back approx 2035 – pt had just walked to toilet. […] On arrival, pt pink and well perfused. Nil diaphoresis. Complaining of 8/10 chest pain radiating through to her back. Worse with cough. Bi basal creps. Coughing up yellow sputum…

Despite evidence of an infective process and recent exertion, the provisional diagnosis is substantiated by the effectiveness of GTN and aspirin (substances known to improve blood flow). The presence of the q wave in the absence of other ischaemic electrocardiograph (ECG) changes is, in this case, an indeterminate finding, as it is unclear if it is new or pre-existing:

> Continued… […] Asprin [sic] given. Gtn 5 sprays en route reduced pain to 4/10. Oxygen 2 lt via NP maintained sats at 95 per cent. 12 lead ECG nil ischaemic changes noted. Q wave and inverted in lead 3 (Ambulance Transfer 78).[16]

Although two health issues (cardiac and infective) are acknowledged in the text, evidence for the more concerning cardiac-related chest pain justifies treatment; and the effectiveness of the treatment combined with assessment findings substantiate evidence for the provisional diagnosis. These entries highlight how information is referenced in relation to the function of the clinical role of a paramedic, as well as the function of the service that ambulance organisations provide. It seems reasonable to suggest, therefore, that interpretations based on service provision authorise transfer in paramedic entries.

Work-flow as authorisation

At the time of triage, a new dimension, not least in terms of the ATS scale, is introduced to documentation. The ATS serves the function of numericising the degree of urgency ascribed to the presentation. It also represents another shift in how legitimacy is documented as the resident is received into the acute care environment of the ED.

The entry below is the culmination of the initial RACF entry, which documents the laceration, application of bandage, and call-back from the after-hours GP enabling transfer to proceed, in combination with paramedic documentation describing their assessment, satisfaction with vital signs, medication alert to clopidogrel and usual mild cognitive impairment, and decision to transfer for suturing:

> ATS 3 – Head Lac. Unwitnessed fall at NH. LOC. 3cm scalp lac. Found at 1840, possibly on floor for several hours after ambulating normally. No gross neuro deficit. Denies pain. On clopidogrel (EDT Transfer 16).

In defining the ATS category as 3, the entry fulfils the purpose of defining a timeframe (this patient can safely wait half an hour), and in documenting the medication clopidogrel, another activity in the pending assessment is implied (i.e. assessment for potential intracranial bleeding). The category of urgency (ATS 3) aligns with Emergency Triage Education Kit guidelines that episodes of loss of consciousness, which are self-limiting and resolved on

[16] Gtn: Glyceraltrinitrate

presentation to triage, may be scored ‘3’ in the absence of other relevant acute findings or clinical red flags (Department of Health and Ageing 2009).

The following narrative concurs with the paramedic focus on chest pain rather than chest infection. Urgency is assessed as ATS 3 and validated with reference to triage guidelines (Department of Health and Ageing 2009):

> ATS 3 – Chest pain since 2030hrs now resolved
>
> Central radiating through to back. […] Patient states [s/he] has had similar pain. AT report bibasal creps, coughing up yellow sputum. Had asprin [sic] and 5 x GTN with some effect (EDT Transfer 78).

Non-clinically compromised patients presenting with resolved chest pain do not necessarily require an ATS 2 (Department of Health and Ageing 2009). However, the ATS does not rule out a cardiac cause; instead, the purpose is to define a safe timeframe for assessment based on clinical presentation. Documentation further justifies ATS 3 by describing the effectiveness of GTN and aspirin in relieving symptoms, medications which may not have been expected to provide effective pain relief for differential conditions such as the infective process.

The above entries highlight how triage authors reference complex guidelines and knowledge of protocols in their narratives in order to produce actionable information. This suggests that presentations which are easily referenced against triage and ATS guidelines legitimise receiving the resident into the ED.

Section summary

RACF, ambulance and ED triage clinicians document from the perspective of their respective organisations, each constructing a version of the context or recontextualisation of transfer that *ipso facto* legitimates what they write. While the groups of interest are all participating in transfer, each references a differing set of norms, processes or rules to legitimise decision-making, at the same time demonstrating their competence in a role. The context and content of documentation is not necessarily contradictory, rather it is transformational, as the authors shift the perspective from help seeking, to assessment and stabilisation, to coded urgency. What stands out is the prioritisation of a single issue, and how the social expectations of site, whether normative expectations or organisational guidelines, influence the focus of the narrative.

5.4 Legitimacy as a socio-cultural process

An author's contextual perspective serves to link the actions they undertake toward their primary goal. The previous narrations have, for example, shown that all three services of interest identify and document transfer practices as tasks. Tasks can include recording blood pressure, in which the act of having taken it is implicit, administering analgesia, in which the act of having given it is implied, phoning for an ambulance, from which the act of deciding ambulance transfer is warranted can be inferred, and allocating a triage category, in which the act of having coded assessment data against a scale is implied. These examples are clearly recognisable actions. A further dimension relevant to this context is found in narratives that construct transfer as a morally responsible enactment. Moral practices still entail tasks, but they are generally not so clearly defined as those described above.

Though there are several transfers in which analogies reveal moral obligations to transfer a resident to the ED – using statements such as: '[…] NH staff urged pt to be transported to hospital for an x-ray as her GP could not be contacted' (Ambulance Transfer 30), 'NH staff not comfortable to keep pt under their care, therefore pt transported to the RHH for further assessment' (Ambulance Transfer 50), and '[…] Has become too aggressive and violent for them to control […]' (EDT Transfer 42) –, this section follows one particular back-and-forth transfer case.

Transfer as the only option

One particular resident is transferred via ambulance to the ED in the very early hours of the morning, returned to the RACF and then re-transferred to the ED in the afternoon of the same day. The reason for transfer is attributed to the resident's behaviour, which, according to the RACF author, has been evaluated as 'unmanageable':

> Resident increased verbal and physical aggression became unmanageable following numerous episodes over past few days and changes to medications 1:1 supervision was maintained on service unit to minimise risk of harm to self and others (RACF Transfer 44).

The ensuing e-PCR entry provides a synopsis of handover from RACF to paramedic, and provides a clearer indication of the reason for transfer:

> Chronic escalation of abusive behaviour: Nursing home staff state that this patient has become unsafe in the Secure Dementia unit of (facility name). AT [Ambulance Tasmania] called to transfer patient to RHH. They state that he has

> been walking around with his eyes shut and has been punching /kicking walls at times. Many of his medications have been withdrawn within the last week and is being placed back on risperedal 9/12. Much time spent to avoid transport pt to RHH however unable to avoid. Nurse states that pt is an imposing figure and not comfortable administering more medication. Nurse states that she has attempted to contact GP assist but was 'unable to contact them'. Unable to fully assess pt as he tells AT to 'fuck off' and push away. Appears to understand English well but choosing not to speak English to AT. Pt has slept/rested entire journey to RHH and whilst being wheeled to ED (Ambulance Transfer 44).

This author highlights that the problem is not an acute change, and re-iterates the evaluative language, ‘unsafe’, ‘imposing’, ‘uncomfortable’, that was presumably used verbally during the RACF handover. Further, the author describes particular behaviours such as ‘punching/kicking walls’, implying that that behaviour is not normal. The reasons for transfer are given as (1) safety of the resident, (2) safety of others, and (3) lack of appropriate resources. Despite these findings, the author also implies that ED is not an appropriate place for the resident when s/he describes an unsuccessful attempt to avert transfer.

The ED triage author refers only to the RACF Transfer entry, and selectively overlooks information provided by the paramedic:

> ATS 5 – Unsafe in secure dementia unit: Currently asleep on ambulance trolley. Incomplete notes from nursing home re why here – phoned (EDT Transfer 44).

Focusing on the RACF Transfer entry, the triage author allocates ATS 5 (two hours) as the resident is ‘currently asleep’ and transfer information from RACF is ‘incomplete’. This triage entry appears to concur with the paramedic author that ED is not an appropriate place for this resident. The resident was returned to the RACF after not being found to be generally unwell and with no findings of acute illness or injury 41 minutes after triage.

Later in the day, the resident was transferred via ambulance back to the ED. On this occasion *no* RACF nursing transfer entries were recorded. In their stead, the following letter from the GP was sent with the resident:

> Dear Sir/Madam,
>
> Thank you for seeing [age and name] who is an elderly gentleman with rapidly progressing dementia/initially alcohol induced. We have tried very hard to keep him in the dementia unit at [RACF name] but he is causing all sorts of problems

> and they cannot keep him there as he is. He gets very agitated at times, trashed his room last night and keeps getting in to other resident's beds and refusing to get out and then becoming aggressive. Two of their female patients have had to sleep in the lounge last night because of his nocturnal behaviour and the women patients are scared of him. We have tried Dementia/Support services who have been and seen him and advised medication reduction & cessation of his pain killers. This made him worse and we have had to recommence them! In my opinion he needs admitting to [alternative facility name] and sorting out but they have said that they are fully booked. He cannot stay at [RACF name] as he is creating havoc as detailed above. Please admit him and sort him or I am afraid he will end up with the police.
>
> [GP name] (RACF Transfer 5).

Using a narrative style with evaluative and descriptive exemplars, the GP describes the RACF's concerns, and also backgrounds information in much the same way as the earlier paramedic entry (Ambulance Transfer 44). The letter describes previous attempts at management and difficulty in escalating the level of care required. As a last resort, the GP implies a threat as an ultimatum for his admission to hospital: the potential for police involvement.

The ensuing paramedic entry is less detailed than the earlier one, and authority to transfer is confirmed by the entry 'booked admission', negating further assessment or treatment roles for the paramedic crew:

> IHT to RHH from Nursing Home – unable to care due to increasing violence and aggression from dementia. Booked admission to hospital and then for transfer to (facility name) Nursing Centre. Nil care required (Ambulance Transfer 5).[17]

The presence of 'expect' in the EDT receival entry indicates pre-notification of transfer by either the ED's RN in Charge or the Medical Consultant in Charge. The 'expect' and GP letter authorise acceptance of transfer. The triage uses narrative to record the problem as behaviour management, and relates the referral to an issue of safety. The only new information recorded at triage is the patients' demeanour at the time of arrival:

[17] IHT: inter-hospital transfer.

> ATS 5 – Increasing agitation: N/H unable to manage behaviour can't guarantee other residents [sic] safety. Currently settled with TAS (patient expect: Currently at [facility name] increasing agitation in evening. alcohol dementia. aggressive at times) (EDT Transfer 5).

After being transferred to ED twice in the same day, the ED diagnosis was recorded as 'Delirium NOS, not due to drug withdrawal', and the resident was boarded in ED for over seven hours before being transferred to an inpatient ward. The back-and-forth transfer highlights how behaviour-related purposes are challenging to fit into the socially accepted functions of an ED. Ease of transfer is dependent on how the terms of transfer are legitimated. This transfer was challenging because both paramedic and triage documentation implied that the transfer was inappropriate. The GP's letter readjusts the focus of negotiation from justifications based on safety to authorisation based on hierarchical standing, as well as by employing moral legitimation using a negative ultimatum.

Obligatory transfers

In contrast, EDs are increasingly used in place of alternative community resources to access services (i.e. radiography, ophthalmology) for less mobile RACF residents. The examples below show how the study ED is used for its investigatory resources, and that access to resources in this vein is an accepted function. Access was apparently not difficult to arrange. In the first example, it is evident that the GP has phoned ahead (see 'expect' entry), and requested a chest x-ray from the Medical Officer in Charge of the ED:

> ATS 3 – SOB and productive cough: Sats 90 per cent RA, 95 per cent on 2 L, Mid zone congestion according to AT. Wheeze on ambulating (patient expect: being sent in by GP 'for a chest x-ray' However sounds like she needs assessment. coming from NH) (EDT Transfer 74).[18]

In the second example, the GP has also pre-notified transfer to ED:

> […] Pt seen by GP who requested transfer to RHH for review by ENT (*Ear Nose Throat*) specialist for red right eye. Nil emergency care required. Nil interventions by AT. Patient GCS 15 whilst in AT care (Ambulance Transfer 64).

[18] SOB: short of breath.

Requests for access to equipment and/or acute resources in terms of a problem rather than a condition were similarly justified with explanations. The triage below is rationalised on the grounds of 'effect' (Van Leeuwen 2007, p. 103). Here the outcome of the required action (tube replacement) is the purpose that builds on and validates the chief complaint (the SPC problem):

> ATS 4 – SPC [supra pubic catheter] problem: Has pulled the top of the SPC needs insertion of new tube (EDT Transfer 58).

Unlike the previous behaviour-related transfer, none of the above entries imply that the transfer is contested. Rather, the entries suggest that GPs expect, and that ED clinicians accept, that RACF residents access and utilise specialised resources via the ED as cross-collaboratory function of the ED.

Summary

The findings show that access to the right level of health care at the right time is not straightforward for RACF residents or those responsible for transfer. The most alarming finding is not directly associated with transfer; however, the collateral outcome is that transfer occurs. That is, there is a gap in service options for behavioural conditions requiring progressively more complex care, and lack of mobile or on-site investigatory options available to cater to residents with restricted mobility. Impediments to transfer are a lack of fit between the reason for transfer and the outcome, as well as differing socio-contextual expectations of ED services. With this in mind, a negatively framed author selects, interprets and transforms information so as to negatively frame the narrative. This finding is exemplified in Ambulance Transfer 44 and the ensuing triage.

The alternative is positive reinforcement and peer authorisation. Peer authorisation, in the form of a GP letter or confirmation to enact transfer, is a leverage tool that overcomes negative judgements imposed on RACF Transfer by exhorting the position of the peer in the hierarchical social history of health care clinicians. Therefore, 'what makes sense for people to do', and by this I include documenting, is contextually valid in the pursuit of a goal or means to an end, because it is inextricably tied to the site and to knowledge learned through immersion in the culture of the site (Schatzki, Knorr Cetina & von Savigny 2001, p. 58).

5.5 Information sharing and exchange

The SBAR mnemonic is integrated into numerous organisations with specialist applications because of its flexibility (Blom et al. 2015; Bonacum 2008; Panesar et al. 2016; Stewart &

Hand 2017). However, application of SBAR to transfer narratives showed how standardised information was narrow and contextually-specific. The following ambulance narrative demonstrates the potential versatility of SBAR. SBAR's overarching framework appears to have been applied in two differing contexts relevant to transfer. While the provisional diagnosis and reason for transfer is pain, an equally valid reason for transfer is access to specialist resources. The paramedic author uses a combination of narration and argument to focus on the resident, on current and ongoing care concerns, and on the RACF's expectations. The combination of acute and longer-term care perspectives results in documentation that has been generated through discussion rather than fact-finding, is sufficiently comprehensive, and additionally is written with the intention of being shared across the services:

> Pain: [Name] lives high care […] She has cellulitis and ? ulcer in right lower leg. Main complaint today is uncontrolled pain in her leg. The GP has not seen her but ? DVT as pain is traveling up her leg. Daughter says the inflammation in her leg is worse than normally is […]
>
> […] Had Endone 10mg at 0800 and 1330 today. […] diagnosed with breast Cancer 6 weeks ago […] She saw the oncologist and started Tamoxifen. She was not suitable for surgery & was allergic to tamoxifen so it was ceased. Apparently the oncologist never got back to the GP about what to do, so nothing has been done.
>
> […] GP has asked that [name] be assessed in the ED for palliation relating to the breast Ca. He has not discussed any of this with patient […] or her daughter. The NH nurses have asked that if she is sent back home today, can she have more pain relief written up to keep her comfortable. They are also requesting that plans or a pathway is made for her entry into palliative care (Ambulance Transfer 1).

The e-PCR entry specifically orients the reader to the provisional diagnosis and to assessments of acute symptoms, meaning that it is in keeping with the Victorian Clinical Approach to a Patient Guidelines (Ambulance Victoria 2016). Yet the application of SBAR goes beyond the issue of pain and provides important underlying details of the management situation, management background, current assessment, and iteration of GP and RACF staff requests. This entry successfully builds on the creation of the call-out-event record, as the author combines an explanatory narrative with argumentation to document knowledge for the purpose of sharing it across services for continuity.

5.6 Chapter Summary

These findings reveal that site-oriented socio-cultural contextual understandings have negative and positive effects on the focus of information in free-text narratives. Documentation practices reliant on mutual assumption and understanding reduce the overall volume of free-text and render it concise. It is assumed that prior knowledge of the ageing process, predominately age-related illness and physiological injury, combined with clinical experience, enabled senders and receivers of information to interpret the need for investigation or treatment tacitly, without extensive explanation. However, overreliance on mutuality has the potential to increase ED length of stay for transferred residents, and the risk of adverse outcomes.

A consistent structure is evident in e-PCR narratives that generally align with ambulance guidelines, and facilitates construction of a clear clinical picture of the transfer event. In contrast, ED triage narratives tend to select information that recursively indicates and justifies category of urgency, communicated to internal staff. The relationship between e-PCR and triage narratives and performance/practice standards sees information constrained by the author's role. Lack of structure creates opportunity for highly variable narratives which are likely to over-rely on mutual understandings. Potential for audit or peer scrutiny is likely to generate more comprehensive transfer information, but, for the same reason, information content is similarly likely to reflect the competency of the clinician; at times to the extent that justification of clinical action/performance dominates the narrative.

This chapter suggests that anticipated future readers and socially accepted norms influence the intention of authors. Narration and argument are frequently used to validate action. RACFs tend to justify transfer by referencing resource-related issues. Paramedics justify treatment and transfer by referencing assessment and outcomes. ED triage nurses correlate chief complaint with category of urgency, thereby justifying receival into the ED. Justification and legitimation practices are produced in fulfilment of the practice expectations of different clinical roles, and on the assumption that judgements on individual practice will be made at some point in the future, whether near or distant. The findings also demonstrate that authors predict potential for adverse or near-miss events, such as medication overdose, mobility risks, cues for investigation or potential for deterioration, and signpost these for future readers accordingly. Verbal handover in the first stage of a resident's journey, and is a significant component of information transfer. This chapter highlighted that paramedics document more detailed supporting information than RACF Transfer entries. Background information regarding events leading up to transfer is provided to ambulance clinicians by

RACF staff. This suggests that clinically significant information is reliant on verbal handover from RACF nurses to ambulance clinicians, and on its subsequent re-iteration and documentation in the e-PCR.

The findings detailed in this chapter also indicate that the ED was frequently used by GPs to access specialist services for RACF residents. Significant challenges in resource-related and behaviour management transfers were found. Transfer documentation for behaviour-related issues highlighted a lack of agreement on the ED being an appropriate destination across groups. There was a marked reliance on transfer authorisations and GP prior assessment to legitimate ED as an appropriate destination. Poor fit with structured, site-specific document formats and documentation tools reinforced the lack of agreement, thus information was transformed to fit institutional norms. This finding was most notably highlighted in the outcome of one GP letter. Existing RACF, ambulance and ED services do not appear to adequately address the care requirements of RACF residents with exacerbations of health-affecting behaviour. The end result is lack of inclusiveness for this population sub-set, and tension between organisations about whom and where care is best provided. In addition, an under-resourced health system creates hand-ball situations that harm the health of affected residents. However, at least one transfer narrative demonstrated a dual focus, accounting for both the clinician's role and the sender's concern, which aided information transfer by shifting the balance from legitimacy of transfer or validation of a practice to shared information intended to provide understanding and continuity.

Chapter 6: Discussion

6.1 Introduction

With the research aim of identifying practice contributing to the persistence of information gaps in the transfer of aged residents from RACF to ED via ambulance as the primary objective, this chapter builds on the quantitative and qualitative findings obtained by zooming in and discusses these findings in light of knowledge obtained by zooming out. Three core elements to the problems with information transfer defined in Chapters 1 and 2 are discussed. The design and purpose of documents used for transfer across services shapes information in ways that are reflective of the function of individual organisations. This implies that, despite being transferred or printed for receiving clinicians, the functional purpose of documents does not include their wider distribution. Rather than acting as conduits for sharing information, documents are treated as records of events and/or work performance that can be scrutinised. Transfer narratives frequently describe situated events or actions that implicitly and explicitly support or refute performance of an action over documentation of patient-centred information. Narration and argument are used to frame context, which legitimises transfer and adds an element of professional decision-making competence. The ensuing consumption and reproduction of information is also driven by the context of the organisation and by the reader's socio-contextual understanding of their clinical role. Triage documentation is an exception to this mere creation of a record, as the triage itself represents current and prospectively co-opted practice. Broadly, the findings of this study suggest that gaps in transfer information persist because documents are predominantly site-specific and are therefore not designed to be shared. Information gaps also persist because representations of organisational and professional competence are stronger drivers of information production and consumption than the generation of complex patient-centred information.

The findings of this study have identified that the goals of transfer are different from the task of transfer, which is frequently at odds with documentation structures. The agency of documents comes from their design and how they are ultimately used in practice. Transfer documents are designed to produce specific information for individual organisations, and are not well-designed for the transfer of essential patient information or inter-professional communication. Information is not standardised, because each professional group tailors their documentation to their respective professional context and goal. Underpinning much of the transfer narrative is a risk management practice through which professionals aim to justify an action to peers, organisations, and future readers.

6.2 Producing information: The embodiment of fragmented health care

This section zooms out on document design and primary function and shows that the structure of documents used for transfer caters to the agency of individual organisations. Differing goals and purposes are designed into document structures, and this encourages information to be produced in a particular way while simultaneously restricting other information foci. For example, RACF documents sent in YEs are a collation of existing documentation, designed around audit and accreditation by the ACFI and other accrediting bodies (Cepar: ARC Centre of Excellence in Population Ageing Research 2014; DOHA 2013; Hamilton & Menzes 2011). The ambulance e-PCR is a record of focused, short-term assessment, treatment, and remuneration, detailing services for the acutely unwell (Eburn & Bendall 2010; Tasmanian Government 2011). The ED triage document is designed to record the urgency of a specific single complaint in terms of a specified time frame (Department of Health and Ageing 2009). Documents designed for purposes relevant to the organisation of origin (defined according to function, i.e. Residential Accommodation Services, and Health Service Organisations) are not always similarly structured. Because of this, transferring documents is symbolic but not collaborative. The expectation is that passing on transfer documents will result in information sharing, but re-interpretation outside the original author's context and lack of reciprocity suggest that the potential for shared understanding is questionable.

Documents from the RACF

Current RACF datasets lack comprehensiveness and inadequately reflect complexity for residents transitioning across services (Davis, Morgans & Burgess 2016; Ehrenberg & Ehnfors 2001; Gaskin et al. 2012), in particular for those with differing specialty foci and, therefore, differing information requirements (Robinson et al. 2009). This study found that documents received from RACFs were classified into various datasets, and that there are multiple document frameworks that differ depending on which RACF sent the information. In addition, information contained in the numerous datasets was frequently incomplete. Types of missing information included the resident's name, comprehensive reason for transfer, RACF service provider name, and GP and next of kin contact details. Progress note documents were used to enter transfer details. Documentation in the non-formatted progress notes resulted in varying clarity. Some transfer entries were very specific, while in others transfer information had to be 'gleaned' from the reading of multiple progress note entries across multiple days. Further, inconsistencies in a specific document being used to enter vital signs recorded for transfer events also made this important information difficult to find; it

was also sometimes recorded ad hoc in page margins (see Chapter 4). These findings concur with previous authors', who, on review of RACF documents, similarly found that disjointed information takes time to piece together (McMurray et al. 2013; Yu et al. 2013).

The numerous information modalities can be attributed to three main, overlapping reasons related to organisational priorities, documentation structure and storage, and off-site system incompatibility and storage. Multiple datasets are generated in RACFs to support quality of life indicators aligned with NATFRAME (Australian Government 2005) and evidence required for funding, accreditation and quality of care (Australian Government DoHA 2013; Daskein, Moyle & Creedy 2009; Davis, Morgans & Burgess 2016; Hamilton & Menzes 2011; Zhang, Yu & Shen 2012). The distinct categories of data produced may assist audit and accreditation, but the structural constraints they impose reduce the capacity to represent complexity without access to multiple documents, or even complete files (Pentland & Feldman 2008).

The second reason is that, while RACF electronic documentation infrastructure is generally supported (Gaskin et al. 2012; Qian & Yu 2014; Yu 2012; Zhang, Yu & Shen 2012), numerous systems with varying degrees of intra- and inter-organisational compatibility exist (Hoare 2009; Phillips et al. 2010; Vest et al. 2011; Yu 2012; Yu et al. 2013). The extent of incompatibility is likely not fully realised, as documentation systems are not universally standardised in Australian RACFs (Davis, Morgans & Burgess 2016). The result of internal system challenges in documenting day-to-day care information has, in many cases, been the creation of dual paper and electronic records (Gaskin et al. 2012; McMurray et al. 2013; Phillips et al. 2010; Qian & Yu 2014), which may require both sets of data to be read in conjunction, along with other documents, for completeness (Yu et al. 2013).

The problems posed by this type of disjointed data recording and storage are further compounded by access difficulties experienced by visiting GP's and allied health workers whom in some cases opt to document off-site (Yu et al. 2013). External, off-site documentation in separate incompatible systems contributes to the inaccessibility of information at the point of care at the RACF. Such challenges in data input also create challenges in retrieval and collation, as required for transfer (Yu et al. 2013). Those responsible for collating information to send with residents from RACF to ED are challenged by the complexities of locating and accessing appropriate information. As Davis et al. (2016) suggest, a uniform dataset and increased compatibility across users could have improved the completeness of information received in this study. Receiving clinicians must also be familiar with multiple formats to first find information before they can even begin to formulate an interpretation.

The Yellow Envelope makes little contribution to loose-leaf transfer information. As an envelope, the YE is a conduit to house and transfer pre-existing information, while the structured list on its face appears to give order to information collation practices. The structure of the list prioritises clerical or administrative information and is likely to be completed. Information appropriate to the latter part of the list, to be enclosed, is intended to be of more relevance to receiving clinicians. Like Dalawari (2011), this study found that the latter portion of the transfer checklist was often incomplete, and that the documents it listed were frequently missing. In contrast, other studies have reported increases in the type and number of documents transferred from RACFs when transfer forms are used (Belfrage et al. 2009; Davis et al. 2005; Reid et al. 2013; Terrell et al. 2005). However, as these reviews were undertaken shortly after implementation of the transfer forms it is unclear if these results were sustained. The missing information in this study supports previous findings that the sending of documents listed as required for transfer, as they appear on transfer forms, is not sustained over time (Dalawari et al. 2011; Griffiths et al. 2014; Hoare 2009).

Documents created for the purpose of record-keeping have long been fundamental to organisations providing a health service. Zooming in and out on RACF documents has identified that there are differences between creating a data record or list and creating a comprehensive record for the purpose of sharing information. This study acknowledges, along with many others, that gaps in transfer information for RACF residents transferred to EDs persist (Boockvar, Fridman & Marturano 2005; Chiminello 2009; Coleman 2003; Coleman & Boult 2003; Dwyer et al. 2015; Gaddis 2005; Kelly et al. 2012; Kessler et al. 2013; Kihlgren, Wimo & Mamhidir 2014; LaMantia et al. 2010; Morphet et al. 2014; Morphet et al. 2015; Reid et al. 2013; Robinson, C et al. 2012; Terrell et al. 2005). This study concurs with Davis et al. (2016) that universally standardised documentation in RACFs would improve information consistency.

The paramedic e-PCR

The pre-formatted e-PCR is not structured to cater to every type of transfer event. In line with VACIS design, e-PCR print-outs organise information into clear and systematic categories under pre-defined headings that tend to be acute in orientation (Ambulance Victoria 2012; Vacis n.d.). Accordingly, transfer events in this study were defined with acute care-oriented provisional diagnoses. Of note is that transfer reasons, in terms of physical resource-related concerns on the part of RACFs, were re-interpreted by paramedics in keeping with the acute care-oriented provisional diagnoses in the drop-down menu of the e-PCR (see Chapter 5).

Despite the carrying-out of some transport-only transfers, and in contrast to the findings of McCloskey (2011b), the majority of e-PCR fields in this study were completed, in keeping with medico-legal (Eaton 2014; Tasmanian Audit Office 2016) and mandatory requirements (Ambulance Service of New South Wales 2009). Another probable reason for good e-PCR completion rates is the practice of 'covering one's back' (Porter et al. 2008). In Tasmania, e-PCRs are audited for compliance with clinical protocols, clinical response times, and billing information (Tasmanian Audit Office 2016). As authors are identifiable by their electronic signatures, audit positively reinforces compliance through annual review and the potential for peer scrutiny.

Rather than finding ambulance records inaccessible to ED clinicians (Shelton & Sinclair 2016), this study, like several others, found that completed e-PCRs were routinely printed *after* triage and provided to the ED for use as a resource and for continuity (Eaton 2014; Knutsen & Fredriksen 2013; Shelton & Sinclair 2016). Unlike loose RACF documents, locating information in the e-PCR is easy due to consistent formatting, clear headings and uniform progression of information (Jenkins 2013; Knutsen & Fredriksen 2013). That the printed e-PCR resembles a medical assessment suggests that it is useful to EDs because the information is already compatible with styles of acute medical information gathering and recording (Jenkins 2013). Although this study did not assess how the e-PCR was used after printing, previous studies suggest that, despite general agreement that paramedic patient records are useful resources, they are not always accessed or accessible in EDs (Knutsen & Fredriksen 2013; Yong, Dent & Weiland 2008).

The EDIS triage document

Triage categorisations represent the prediction or likelihood of deterioration within a given timeframe based on the chief complaint, correlated with clinical parameters against a numerical scale to determine urgency (Department of Health and Ageing 2009; Tucker, Clark & Abraham 2013). In addition to key patient identifiers, chief complaint and urgency are equally prioritised as the focus of data entry using the electronic interface of the EDIS triage process (see Chapter 4). Triage documentation requirements are that the information is concise and directed at conveying the clinical status of the patient (Hodge et al. 2013). Printing a hard-copy of the EDIS entry maintains the physiological concern as the main priority, followed by alerts and ATS category (Appendix 6).

Risk management is part of the ED's mandate to prevent deterioration by imposing limits on the amount of time patients wait to be seen (ACEM 2000; College of Emergency Nursing Australasia 2014; Forero & Nugus 2011). The agentic nature of an ATS category of urgency,

in terms of managing risk recommends that an action/action(s) be carried out within a given timeframe. Difficulties in meeting the timeframe are compounded by pressure to remain on target as per the four-hour rule, which, although no longer enforced, is still considered the benchmark of practice for EDs (Silk 2016; Street, Marriott & Livingston 2012; Sullivan et al. 2016).

One problem is that triage based on urgency alone sees RACF residents regularly allocated into lower categories (Arendts, Dickson, et al. 2010; Briggs et al. 2013; Morphet et al. 2015; Olofsson, Carlstrom & Back-Pettersson 2012), which suggests that RACF presentations are frequently interpreted as non-urgent. However, triage is not a validated measure of complexity or severity (Forero & Nugus 2011). Both of these factors are likely present in RACF residents due to pre-existing chronic comorbid conditions, acute-on-chronic presentations, and new conditions (AIHW 2013; Bachelard 2017; Briggs et al. 2013). In agreement with Forero and Nugus' review of the ATS (2011, p. 17), this suggests that the complexity of patients in categories 3,4, and 5 is likely to differ from the 'relative urgency of their conditions'. In addition, application of the ATS to a single chief complaint may poorly reflect the resident's potentially atypical physiological status (Parke et al. 2013). Residents in this study were selected based partly on whether they fell into ATS categories 3, 4 and 5 (see Chapter 3), and most remained in ED for an average of 6.22 hours before being discharged to either a ward or to the RACF of origin (see Chapter 4). In addition to being well over the suggested four-hour target, the length of stay likely increases the risk of adverse events/outcomes (Morphet et al. 2014; Rutschmann et al. 2005; Schnitiker et al. 2011).

This study has shown that the primary function of a document is determined by its organisation of origin. In many cases, the goals of future readers, especially administrators, auditors and performance reviewers, are interwoven. RACF documents separate tasks from outcomes. This practice makes auditable information easier to find, yet, conversely, it also ensures that the recording of complex information is kept in check. When ad hoc combinations of paper and printed electronic information are compiled for transfer, some of the context underpinning the meaning associated with the information is lost. Although the YE is intentionally designed as an information transfer aid, the frequently incomplete checklists and variable information sent to ED suggest that the YE is undervalued, and that, in practice, it is used more as a tool that symbolises rather than aids transfer of information. The e-PCR is designed to capture events, tasks, outcomes, time frames and billing information, later uploaded to an ambulance-specific, central database. Though the e-PCR is also designed for printing, leaving a hard-copy with the ED is done as a professional

courtesy, and the information remains primarily designed to meet the needs of the ambulance service. The EDIS triage document is designed to generate information specifically relevant to, and in support of, coding urgency. This study has shown that the structure of documents used across transfer is weighted toward functional business matters relevant to each of the respective organisations. Information specificity is a desirable attribute in specialised services, because what matters is designed to reflect performance of that organisation and/or clinician. However, specificity also increases the amount of effort required to share complex information.

The need to communicate information across multi-organisational, multidisciplinary services requires that RACF, e-PCR and EDIS documents are read together to facilitate comprehensive information transfer. However, in each new iteration, in each new document, information is transformed to fit that document's, and therefore the organisation of origin's, particular purpose. The distinct information and formatting requirements within documents are therefore also representative of boundaries between the services. Only the e-PCR draws information datasets together to generate comprehensive information, adding context to the transfer event. Conversely, neither the YE, pre-existing documents sent by RACF, nor triage using EDIS are designed to generate a comprehensive health history or include the entirety of the transfer event. Therefore, a collation of these documents does little to create a functional information system, however temporary. In part, the availability of a complete and accessible e-PCR acts as a mediator between RACF and ED, because information entered into e-PCR transfer narratives enables many, though not all, information gaps to be addressed (Cunningham et al. 2014).

6.3 Consumption and translation: Mnemonics and inter-facility transfer

The researcher's assumption that complex information to guide transfer entries is documented using mnemonics was not substantiated across all groups in this study. The conventions of site-driven standards and documentation of the most important socially or clinician-determined aspects of the transfer event restricted information to the author's main concern. This focus was also noted to limit the degree of information complementary to the transfer event, being most evident in RACF and ED triage transfer narratives.

Analysis of standardised narrative content using SBAR (see Chapter 4) revealed the focus and emphasis of information documented by each group. An overall analysis showed that the umbrella components of the SBAR mnemonic were relatively frequent, but differences were drawn out when it came to the narrower sub-elements. Exceptionally brief narratives appeared to rely on mutual understandings and common ground. More detailed narratives

were found in the more inclusive, standard SBAR elements, differentiated by context to suit objectives aligned with the role or goal of the clinician and the function of their organisation.

SBAR analysis also revealed that transfer documentation differed depending on the author's primary intention. For example, narratives that were tracked across RACF, e-PCR and ED triage records each identified components of S, B and A, but the focus of those elements reflected slightly differing concerns within each group. Conversely, lack of continuity of R (stating or carrying forward recommendations or requests) was notable by its absence as transfer progressed. It is well recognised that tailoring information enables authors to maintain a specific priority (Bonacum 2008; Loseby, Hudson & Lyon 2013; Stewart & Hand 2017). However, such specificity suggests that when it comes to documenting information to enable a reader to comprehensively understand an unfolding patient presentation, the practice of tailoring is also restrictive.

In order to provide comprehensive health care across the life-span, system fragmentation calls for physical and comprehensive information resources to be shared (Prior 2003; Saidel 1991). This is particularly important for RACF residents with cognitive impairment, who are already disadvantaged by not being able to adequately communicate comprehensive health information for themselves (Arendts, Dickson, et al. 2010). Risk of increased morbidity and mortality associated with increased lengths of stay in the ED, in part precipitated by the inadequate handover of information, has persisted over time (Coleman 2003; Griffiths et al. 2014; Hwang & Morrison 2007; Schnitiker et al. 2011). The following section provides a discussion of practices within the group(s) of interest, revealed by application of the SBAR mnemonic to the transfer narratives.

Use in the RACF transfer narrative

Applying SBAR to RACF transfer narratives revealed that information was not standardised across RACFs, highlighting considerable variation, and often deficiency. Approximately half did not document a specific reason for transfer, provide vital signs at the time of transfer, or document a baseline cognitive function (see Chapter 4). These findings are similar to previous studies which also demonstrated that minimal communication regarding a transfer from RACF to ED is not uncommon (Cwinn et al. 2009; Hoare 2009; Kihlgren, Wimo & Mamhidir 2014; McCloskey 2011a; Morphet et al. 2014). It is unknown whether these findings correlate with prioritisation of patient care and a subsequent lack of time to record information while providing that care (Gaskin et al. 2012; Olsen, Hellzen & Enmarker 2013; Olsen et al. 2013; Pelletier, Duffield & Donoghue 2005).

However, previous studies have observed that background information, including current and prior care management strategies, as well as assessments, are also poorly documented in RACF progress notes (Daskein, Moyle & Creedy 2009; Ehrenberg & Ehnfors 2001; Gaskin et al. 2012; Olsen, Hellzen & Enmarker 2013; Pelletier, Duffield & Donoghue 2005). These findings are likely related to a number of factors, such as charting to support audit (Cepar: ARC Centre of Excellence in Population Ageing Research 2014; Hamilton & Menzes 2011), charting by exception (Australian Government 2005), poorly integrated hybrid paper and electronic documentation systems (Yu et al. 2013), and entry/storage of patient information in inaccessible or incompatible systems off-site (Alexander et al. 2016; McMurray et al. 2013; Yu et al. 2013).

Application of the SBAR framework also revealed boundaries between organisations. These were most visible in narratives written for residents for whom treatment had been commenced but was either unsuccessful or beyond the capabilities of the site, and for residents with behavioural conditions not suited to available staffing ratios or physical resources (see Chapter 5). The context of S, B and A in these RACF narratives reflected the functional capacity of the individual sites. A focus on resource capabilities justified why the resident required transfer to another facility and highlighted the limits, or upper boundary, of care.

Identifying inadequate or inappropriate resources as the reason for transfer is also potentially an attempt to combat stigma associated with residents being transferred to the ED (Gallagher et al. 2015; Kihlgren, Wimo & Mamhidir 2014; Skar, Bruce & Sheets 2015). Recent research focusing on the appropriateness of RACF-to-ED transfer (Briggs et al. 2013; Codde et al. 2010; Finn et al. 2006), alternative treatment options (Carter, Skinner & Robinson 2009), and risks associated with hospitalisation (Morphet et al. 2014; Rutschmann et al. 2005; Schnitiker et al. 2011; Taylor, Rush & Robinson 2015) may reduce the perception of the ED as a suitable point of care for older persons. Shifting the reason for transfer away from the physiological to resources and resource limitations of a service legitimises transfer, because both the existence of and/or access to proposed alternative services is insurmountably limited (see Chapter 1).

In contrast, paramedic e -PCR narratives contained more mnemonic and more physiologically focused elements. As comprehensive information specifically related to the transfer event is limited in the RACF transfer entry, comprehensive handover must be communicated verbally, suggesting that information passed from RACFs to ambulance clinicians is predominantly spoken, and concurring with earlier research that verbal information sharing practices are preferred by RACF nurses (Gaskin et al. 2012; Pelletier,

Duffield & Donoghue 2005). Also implied is that receiving verbal handover enables paramedics to provide additional 'Situational' and 'Background' details. This contrasts with previous findings that verbal handover is limited, undertaken opportunistically at the time of transfer (McCloskey 2011b), and suggests that the interaction is sufficient to generate a clear clinical picture of the transfer event.

Shared mental models

An apparent shared mental model, resulting in brevity of information, was found to represent common conditions of transfer documented by RACF nurses. RACF transfer narratives frequently included the first three elements of 'Situation' (current problem(s), reason for transfer, and concerns), and entries for common types of transfer were particularly brief and reliant on the reader's interpretation (see Chapter 4). This finding gained traction in Chapter 5 after further interpretation of narrative documentation practices. One entry, for example, only included the objective information 'fall and hit head, altering conscious level' (RACF Transfer 19), leaving readers to fill in the gaps. As recent studies show, 22 per cent (Finn et al. 2006) to 37 per cent (Gray et al. 2013; Gruneir et al. 2010) of residents are transferred to the ED for falls-related injuries each year. It is therefore feasible that falls-related injuries are common reasons for transfer along with actual and potential injuries that are mutually understood, recognised, and similarly assessed by paramedic and ED clinicians alike (Ehrenberg & Ehnfors 2001; Voutilainen, Isola & Muurinen 2004), thereby enabling receivers of very limited information to fill in what's missing by interpreting the narrative using existing knowledge (Van Leeuwen 2007).

However, the shared mental model approach was inconsistent. Use of this approach to transfer documentation by RACFs appeared to be dependent on the goal of the author (Bystrom & Lloyd 2012). For example, when the ED was the perceived endpoint of transfer, as was commonly inferred for acute investigations or treatment, a frugal shared mental model approach was evident (see Chapter 5). In transfers where the ED was *not* the perceived endpoint, such as cases for admission or specialist review, transfer documentation tended to be comprehensive; although the focus remained limited to a particular objective or concern, which in many cases revealed a lack of appropriate resources in RACFs rather than information focusing on continuity for the resident (see Chapter 5).

Considering over half the residents in this study ended up being admitted to hospital, the use of variable approaches to documenting transfer is concerning because of the increased risk of information being missed or deliberately omitted. The problems with non- standardised

transfer documentation are compounded by lack of consensus on what constitutes essential transfer information for RACF residents from the perspectives of EDs, GPs and RACFs (Griffiths et al. 2014). In addition, and as confirmed by this study, there is lack of agreement on information identified as appropriate to include in transfer lists (see Chapter 4). Further, calls from peak bodies for safety across handover (ACSQHC 2012b) do not appear to apply to residential/accommodation services (Australian Government 2006), despite the increasing rate of RACF residents being sent to EDs (AIHW 2012a). Reasons for a lack of standardisation in RACF transfer documents/documentation are therefore multi-factorial, though they are communally associated with a fragmented care system and, by association, with fragmented fiscal responsibilities, and with legal definitions that create disjunctive interpretations of an organisation's responsibility.

Information that counts in work-task performances

Tailored mnemonics cast shade on comprehensive, complex information. Inter-facility handover has not received the same attention as clinician-to-clinician handover in the literature, and thus evidence correlating the use of mnemonics with continuity of care following inter-facility transfer is lacking (Manser 2013). Further, no studies specifically investigating paramedic documentation and incorporation of complex care information intended for continuity were found. Most research on paramedic handover has focused on mnemonics and acronyms intended to facilitate recall centred on trauma patients (Ebben et al. 2015; Owen, Hemmings & Brown 2009).

It is undoubtedly vital that handovers for trauma patients are succinct and specific to avoid delays in treatment, yet it is also known that ATS category 3, 4, and 5 patients (the same categories predominantly given to RACF residents) receive less urgent care than those in ATS categories 1 and 2, and that these three less urgent categories make up the majority of ED presentations, admissions, and later in-hospital deaths (Dent, Rofe & Sansom 1999; Doherty, Hore & Curran 2003; Yong, Dent & Weiland 2008). Additionally, comprehensive information inclusive of complexity and dependency is not factored into the ATS (Health Policy Priorities Principal Committee – Report 2011; Hodge et al. 2013). These combined factors suggest that RACF residents are underserved and inadvertently placed at greater risk of adverse events by the very information systems used to support and advocate for them.

Despite this, ambulance narratives are still considered the best reference for information gathered outside EDs (Cunningham et al. 2014). Mnemonics are used to structure thinking (and, by extension, documentation), and also to aid information recall following episodic

care. Mnemonic structures tend to be overarching, as the specific content is dependent on the clinical setting and local context as determined by individual clinicians (ACSQHC 2012b). Tailoring is widely used in relation to acute medical and trauma events, and numerous resources in this vein are available (Dawson, King & Grantham 2013; Jenkins 2013; Loseby, Hudson & Lyon 2013). However, little documentation advice exists for paramedics performing a clinical function in addition to facilitating an inter-facility transfer.

It has previously been suggested that standardising handover information using mnemonics like SBAR (ACSQHC 2012b) and IMIST-AMBO (Iedema et al. 2012) can reduce risks associated with transfer for residents of aged care facilities. However, it is difficult to appreciate how this can be achieved, because tailoring mnemonics, or, as it is sometimes called, 'flexible standardisation' (Wong, Yee & Turner 2008) generates a pre-determined minimum dataset that is applicable to a specific site-relevant context (ACSQHC 2012b).

This study found that while the structure of e-PCR narratives is varied, the order of most resembles: C/T (called to), O/A (on arrival), O/E (on examination) and HX (history) (Ambulance Service of New South Wales 2009). This approach to documentation is in keeping with the Clinical Approach to a Patient Guidelines (Ambulance Victoria 2016). Within this approach, select mnemonics such as MIST and AMPLE (see Chapter 2) are incorporated to highlight very specific, socially expected assessments (Lloyd 2010; Schatzki 2005b).

The information these combined mnemonic structures generate balance collective validity (in terms of summarising the precipitating reason for call-out), professional competency (in terms of connecting provisional diagnosis and/or treatment with assessment findings), and context. Despite conforming to these role-related social expectations, the e-PCR is also a mediatory source of information. This at first implies that the Clinical Approach to a Patient Guidelines may be a more frequent reference of complexity than commonly used mnemonics.

Standardising content using SBAR could, however, marry transfer information at an individual and organisational level. Two of the above-cited e-PCR examples first detail information about the primary call-out event, then shift focus, applying the same structure to state resource-oriented concerns expressed to them by the RACFs. They also detail future decision-making/care planning discussions in the context of the current transfer event. Rather than use mnemonics solely for the sake of specificity (Loseby, Hudson & Lyon 2013), these narratives integrate information intended for social coordination (Raczaszek-Leonardi, Debska & Sochanowicz 2014) by reflecting on the patient's current situation (which

precipitated the transfer request), *and* the overall expectation(s) or goal(s) of transfer (see Chapter 5). Inclusive co-constructed information is communicated instead of a practice performance record. It is therefore plausible that SBAR could facilitate an inclusive temporary communication system across services. However, as mnemonic use is strongly influenced by the situated practices of authors, the potential to successfully achieve this temporary communication is dependent on clinicians being educated in how to integrate knowledge across an entirely fragmented system of care.

Triage fulfils the task of determining a chief complaint and correlating it with an ATS category of urgency (Department of Health and Ageing 2009). Zooming in on using SBAR highlighted how information is enabled and constrained within this context. As discussed in Chapter 3, practices at organisations' sites are phenomena that are enabled through, and are the efforts of, a diverse interconnected web (Nicolini 2009), and include those practices that give effect to agency from a distance (Prior 2003). Zooming out revealed that triage produces a number of effects/outcomes that render the triage document and its discursive components equally important (Iedema 2007). The findings as follow discuss triage and the clinicians' practical concerns (Nicolini 2009) alongside broader operational, site-oriented effects (Lindberg & Rantatalo 2015) brought about by the completion of triage.

Triage nurses have poor access to advice on triage of the aged. Seventy-five per cent of Australian EDs use the nationally available Emergency Triage Education Kit (ETEK) for training and guidance on aligning chief complaint and ATS (Health Policy Priorities Principal Committee – Report 2011). The ETEK contains instruction on communication, paediatrics, adults, obstetric presentations, and mental health (Department of Health and Ageing 2009). Other literature on ageing and health contains advice on the complications of comorbidity and different physiological responses to illness (Rutschmann et al. 2005; Tucker, Clark & Abraham 2013), and encourages clinical awareness of Advance Care Directives (Lewis et al. 2016). Yet guidance for persons aged over 65 years in the ETEK is severely limited by comparison. These limitations have been acknowledged and identified as points to address in the Australian Triage Process Review published in 2011 (Health Policy Priorities Principal Committee - Report 2011), though it is unknown what stage of development actions on these recommendations have reached.

Lack of guidance does not mean that triage of persons aged over 65 years is an everything goes in affair. In this study, the SBAR analysis highlighted that almost all elements of 'Situation' were documented, followed by increasing narrowly focused 'Assessment' and 'Background' information (which were most often reiterations of vital signs and history of the current problem). However, less than 30 per cent of triage narratives incorporated a

synopsis of prior treatment, and fewer still passed on recommendations or requests (see Chapter 4).

This suggests that triage authors generally adopt ACEM guidelines that recommend limiting data to essential details relevant to the chief complaint (ACEM 2000). Though it is unlikely that extraneous information is altogether ignored when determining an ATS (Vance & Spirivulis 2005), it is beyond the scope of this study to comment on how triage nurses make decisions. This study does, however, concur with the above author that documentation of additional or extraneous information in triage narratives is infrequent (Vance & Spirivulis 2005).

Limiting the triage focus to chief complaint and category of urgency ensures that access to clinical intervention for the most urgent need is not impeded by unnecessary information (Hodge et al. 2013). It is also in keeping with the functional role of triage, which, at its most basic, means 'to sort' (Department of Health and Ageing 2009). On this point, emergency nurses as a collective and Ambulance Victoria agree that information required at the point of entry to the ED is not as broad as that required in an internal handover (College of Emergency Nursing Australasia 2014; State Government of Victoria 2014). The joint distinction is an important one, because it implies that information intended to aid continuity is not a priority of either triage nurses or paramedics on arrival at the ED.

Actionable information

Whether initiated and acted on by the triage nurse or Nurse in Charge, triage documentation provides a basis for action. The 'Situation', 'Background' and 'Assessment' elements in this study were most often specifically relevant to the physiological condition of the patient. However, other practical concerns, such as ensuring allocation to one of the numerous zones within the ED (i.e. waiting room, clinic, paediatrics, isolation, resuscitation, main cubicles), were also highlighted.

Streaming is a process of aiding workflow from the time a patient arrives at the ED. The triage nurse makes informed decisions about where the chief complaint will be most appropriately managed, and allocates a corresponding location on the triage record. Streaming implies agreement with Vance and Spirivulus (above), as it necessarily considers perceived complexity, such as clinical management, time to be seen, departmental resources, and staffing (Grouse et al. 2014; Health Policy Priorities Principal Committee - Report 2011; Hitchcock et al. 2014; Lyons, Brown & Wears 2007; Smith & Burscough 2015).

Although streaming is not intended to be a primary function of triage, it is becoming more prominent (Smith & Burscough 2015; Yong, Dent & Weiland 2008).

This study agrees that the 'site' influences the production and reproduction of conventions that are socially acceptable, and therefore also the content of documentation, such as in transfer narratives (Ocasio, Loewenstein & Nigam 2014; Schatzki 2005b). For example, a triage entry indicating that a patient with a skin tear requiring suturing (chief complaint) is also bed-bound and incontinent implies that the fast track zone of ED (which is generally furnished with chairs) is not the best place to manage the patient. The presence of extraneous information in the triage narrative therefore suggests that its more frequent inclusion may improve resource management and patient safety.

Clinical role contributes to the interpretation and transformation of data. Each new interpretation may, however, lose nuances directly relevant to ongoing management. Tracking transfer across services demonstrated how the situation behind the reason for transfer was reframed in light of each author's clinical role. One RACF transfer was initiated due to inappropriate built environmental and staffing resources. The ensuing e-PCR provisional diagnosis transformed the reason for transfer to reflect a more physiological concern. This was re-interpreted at triage as a specific physiological complaint (see Chapter 5, Transfer 8). It was previously found that ambulance nurses had difficulty handing over complex patients lacking specific physiological concerns because the reason for emergency care was not clear (Bruce & Suserud 2005). In addition to fulfilling a specific role, it is possible that lack of clarity is amplified by the use of mnemonics tailored for acute care-oriented presentations (Talbot & Bleetman 2007). This study suggests that, in addition to the influence of the 'site', a clinician's self-perception of their clinical role, and their understanding of material and non-material documentation expectations, both positively and negatively influence the presence of gaps in transfer documentation.

Pressure to see patients within a given timeframe is another reason that extraneous information is selectively incorporated at triage. While there is no set quality control standard in Australian triage (Hodge et al. 2013), it is worth noting that audits, and in particular those reviewing chief complaints, ATS and National Emergency Access Targets (NEAT), have the capacity to affect documentation. At the time of data collection, time to medical review falling inside NEATs resulted in the allocation of reward-based funding to EDs (Council of Australian Governments (COAG) 2011; Silk 2016). As a result, emergency departments nationally were pressured to improve their departmental-wide systems. Despite triage being an already time-limited process (College of Emergency Nursing Australasia 2014; Hodge et al. 2013), this pressure enforced and, in some cases, led to the adoption of new coping

strategies. EDs' adoption of triage manipulation strategies such as streaming and fast track are management strategies similar to those that evolved from long waits and environmental constraints in the US (Wolf et al. 2017).

NEATs are no longer linked directly to individual ED funding, but pressure to meet timeframes and keep within the four-hour rule remains (Silk 2016; Street, Marriott & Livingston 2012; Sullivan et al. 2016). The findings of this study suggest that most triage authors adhere to ACEM guidelines when writing explanatory narratives, and hence document particularly focused and limited information. In agreement with the Australian Triage Process Review (2011), development of assessment and complexity principles to guide triage decision-making for the aged would not only complement and support ATS, decision-making and streaming (Health Policy Priorities Principal Committee – Report 2011, p. 8), but would also make the inclusion of complex information for continuity more socially acceptable. It is less clear, however, if revisions to the current format or an adjunctive complementary model would be the best way to proceed. Investment in new strategies could modernise the existing triage system and give rise to a new level of communication for RACF residents and, more generally, for interfacility transfer.

Triage is a task-focused, generative practice of limited flexibility with a propensity to affect departmental practice. This dual role implies that the pieces of information most valued by the triage author and internal ED readers are the chief complaint and ATS urgency. Selective inclusion of information at the time it is received ensures information that counts in support of the chief complaint and ATS is documented. However, this study found that some triage authors expand that information to reiterate requests for services such as x-rays and specialist review (see Chapter 5). Documenting for triage is therefore a juggling act of deciding clinically important information and trajectory planning information, while at the same time constraining adjunctive information that detracts from the clinical role being enacted (Raczaszek-Leonardi, Debska & Sochanowicz 2014), regardless of its later potential to affect care.

The more detailed and greater volume of information documented in e-PCR narratives compared to RACF narratives in this study suggests that much of the excluded information is handed on verbally. It is also likely that a large amount of information is spoken by paramedics at triage (Vance & Spirivulis 2005). Problematically, ED staff recall only around half of the information they receive verbally (Talbot & Bleetman 2007; Jensen, Lippert & Ostergaard 2013). In addition, up to a 28 per cent mismatch between paramedic verbal

handover and ED documentation has been demonstrated (Evans 2010, cited in Dawson 2013,p.398).

Information that might not be important to performing a task at the time of transfer can be particularly important to decision-making, goals of admission, and ongoing care. Some might consider this information to be readily available in RACF admission sheets, care plans and advance directives, and thus expect there to be no need for the information to be repeated. However, as has previously been shown, transfer information received in EDs from RACFs is frequently inadequate, and residents continue to be at risk due to missed or omitted information (Boockvar, Fridman & Marturano 2005; Cwinn et al. 2009; Hoare 2009; Kessler et al. 2013).

6.4 Constructions of legitimacy

The process of zooming out identified three overlapping themes covering legitimate need for transfer, organisational boundaries, and demonstrations of competence, each united by the broader concept of legitimacy but with different constructions of reality underlying each frame (Lloyd 2010; Schatzki 2005b).

Regardless of the organisation of origin, every documented transfer narrative from the first iteration in RACF, subsequent iteration with paramedics and on arrival to ED triage, attempts to establish that the actions undertaken for, during and of transfer are justified. As Berger and Luckmann (1966, p. 111, cited in Van Leeuwen 2007, p. 92) state: 'Legitimation provides the 'explanations' and justifications of the salient elements of the institutional tradition.' Defined in this way the views of legitimacy that Berger and Luckman relate to institutional sites overlap with epistemological tenets found in the site ontology of Schatzki (2005b).

Despite the individual agency of each service, the concept of legitimacy overlapped across all groups because of pre-established conventions which have developed over time (Bhatia 2012; Lloyd 2010). Therefore, although transfer narratives are individually authored, each is also socially grounded by site-related context (Gheradi 2009) *and* by external social conventions (Kockelman 2007). Though it does not provide an exhaustive list, Practice Theory highlights some of these subtle and not-so-subtle conventions (Nicolini 2009), and they are discussed in terms of their implications for narrating transfer information. Additionally, and despite discussion of these practices appearing under separate headings, many of the conventions showed overlap. This occurs, for example, when the concepts of moral rationalisation and peer authorisation are found to support an author's legitimacy

claims. At the same time, though, findings relevant to the orientation of a 'service' suggest that potentially missing or inadequate levels of health care perpetuate rationalisation and authorisation as valid forms of legitimacy. The particular relevance of this section is the new information it presents to aid understanding of why information gaps have endured.

Pre-empting risk

Maintaining the safety of patients is an obvious practical concern in any situation, and is of heightened concern following handover of care from one clinician and/or service to another (ACSQHC 2012b; Tews, Liu & Treat 2012; The Joint Commission 2012; WHO Collaborating Centre for Patient Safety Solutions 2007; Wong, Yee & Turner 2008). Risks to patient safety are referenced in multilayered ways, but two in particular stand out. As discussed earlier in this chapter, assumed mutual understandings are commonplace in transfer narratives. Common lexicons are used by all groups to imply risk with varying levels of elaboration. The least elaboration was found in RACF entries, for example: '? GI [gastrointestinal] bleed' (Chapter 5, Transfer 27).

Using lexicons to legitimise transfer relies on socially accepted internal and external conventions, because the extent of a potential risk must be understood by drawing on past or experiential knowledge in its interpretation (Prior 2003; Raczaszek-Leonardi, Debska & Sochanowicz 2014). The example of Transfer 27 (above) implies any one of a number of potential outcomes associated with gastrointestinal bleeding, such as hypotension and shock, of which emergency clinicians are well aware and therefore can reliably agree on (Ambulance Victoria 2016; Department of Health and Ageing 2009). And because these potential adverse outcomes are part of the weighing up process, it is implied that assessment and treatment are better attended to sooner rather than later. Actual or potential risk is therefore a legitimate reason for transfer, even though it might be dependent on situational awareness to ensure that transfer is carried out in spite of information shortfall (Paulin & Suneson 2012). Common ground thus reinforces the use and perpetuation of inference in transfer narratives that make this practice an accepted norm (Prior 2003) because it works.

Signposting is another way that author's highlight risk. Signposting in the context of transfer describes how clinicians refer to concerns such as allergies (Chapter 5, RACF Transfer 20), potential for medication overdose (Chapter 5, EDT Transfer 11, EDT Transfer 41), and falls (Chapter 5, AMB transfer 50; EDT Transfer 26).

Risk is context-dependent. In basic terms, understanding that a safety risk exists requires that knowledge be considered in the context of a given situation (Endsley 2000, citied in Paulin & Suneson 2012). Signposts, considerate of the receiver of information and the impact the information might have on patient safety (Wong, Yee & Turner 2017), are implied in the narratives of each organisation. A good example of this prospective awareness is RACF Transfer 17 (see Chapter 5). In this example, a resident lost consciousness. Authors signposted the last time food or fluid was consumed, alerting information receivers to potential complications related to loss of the glottic reflex and aspiration. Despite the recency of the information being very relevant to future care and avoidance of adverse outcomes, signposting was infrequently included and, when present, was consistently located in the last one or two sentences.

Prior experience is a positive influencer in pre-empting future events, however this study is unable to verify this assumption. One likely explanation for these entries being addendum-like in practice is that signposting strategies reliant on experiential knowledge (Paulin & Suneson 2012) are less likely to proliferate in today's modern health systems in which clinicians are narrowly specialised, and services are fragmented by both purpose and locale (Greenhalgh et al. 2010). The act of signposting suggests that the authoring clinicians must have some understanding of the role or situation of the receiver in order to predict a possible future adverse event (Endsley 2000, citied in Paulin & Suneson 2012, p. 88). This discussion has highlighted that references to risk have different objectives from narrating the primary reason for transfer. Use of dialogical lexicons to imply risk creates an overreliance on shared mutual understandings, which may inadvertently be adversely affected by limited clinical exposure.

Accountability

Reference to a historically authoritative figure also limited the need for a comprehensive transfer narrative. Investing authority in a figure because of their peer status elevates this kind of reference to a hierarchically accepted position of power (Svensson 1996; Van Leeuwen 2007), effectively negating any need to provide extensive information to justify the transfer. In this study, RACF entries frequently included authoritative statements, most often referencing the resident's GP, although, to a lesser extent, nurse practitioners and unit managers were also mentioned (see Chapter 5). This use of power to achieve an outcome aligns with previous studies (Jablonski et al. 2007; Kirsebom, Wadensten & Hedström 2013; McCloskey 2011b; O'Neill et al. 2015), and with other long-standing hierarchical relationships in health care (Churchmann & Doherty 2010; Formosa 2015; McCloskey et al. 2009; O'Neill et al. 2015; Svensson 1996; Tija et al. 2009).

According to Nicolini (2012), a shared understanding being commonplace in a culture implies that it is a regular and accepted practice, and thus it can be considered a normative rule; not necessarily a formalised rule, but rather one that is institutionalised through experience and example (Prior 2003), and, because of this, perceived to be valid. However, power relationships used in transfer as validity claims shift the context from what is socially accepted as legitimate, to *possession* by another person, or, impersonally, by a rule (Van Leeuwen 2007). Possession absorbs responsibility for transfer when it is deterministically attributed by the author, even in reference alone (Schatzki 2005b). In contrast, paramedics are independently responsible for determining, and therefore self-authorising, if transfer to a higher level of care is warranted (Eburn & Bendall 2010). This may be a reason why the e-PCR narratives in this study included warrants for transfer decision-making (see Chapter 5). Despite differences, these findings suggest that the onus is on the figure of authority to provide adequate information rather than on the executor of the transfer act, providing that that person is not one-and-the-same. Therefore, authors of transfer narratives that defer responsibility to an authoritative peer are not personally socially obliged to document extensive information.

The transfer narratives authored by individuals belonging to each of the groups of interest in this study were all signed either by hand or with a personal coded identifier. Assigning a name, whether it is coded, digital or autographic (Gheradi & Landri 2014) serves as an illustration and record of responsibility. Signing documents, in the context of professional health care, is envisaged as upholding the truth of its particulars (Hopwood 2014) by placing individual professional expertise, and therefore professional competence, at stake (Gheradi & Landri 2014). For this reason, signatures are used to demonstrate accountability (Gheradi & Landri 2014; Hopwood 2014; Prior 2003) in the defence (Eaton 2014) or prosecution of litigation such as those pursued by AHPRA (Australian Health Practitioner Regulation Agency 2017a).

In contrast, the YEs did not require a signature in any of the three formats identified (see Chapter 4). The design omission implies that persons completing details on the YE and collating the loose documents it lists are not professionally accountable for this work. However, the practice of signing the YE is complex, because there is little association between the author and the collation of information (Gheradi & Landri 2014) and is potentially one reason that listed information on the YE is frequently incomplete (see Chapter 4). Yet adding a signature option to a multidisciplinary communication note has been found to facilitate completion of non-compulsory information fields (Panesar 2016). Therefore, a similar effect may apply to YEs were a signature field to be added.

Resources as boundaries

ED and ambulance clinicians sometimes consider RACF resource limitations leading to requests for transfer, which are specifically related to the built environment or difficult-to-manage behaviours, to be unsatisfactory justifications for transfer to ED. The pressures of inadequate resources are poorly understood contributors to transfer decisions, which, as a consequence, requires extensive justification to be accepted as legitimate (Olsen et al. 2013). This finding was exemplified by following Transfers 5 and 44 across services (see Chapter 5). In particular, these two transfer narratives demonstrate that some RACFs clearly surrender responsibility and accountability for ongoing care as a response to limited resources (Geiger 2010). Paramedics attending these kinds of call-out may be restricted to the task of transport, giving them more or less the function of 'postmen' delivering both patient and documents (Olsen et al. 2013, p. 2969), and that ED triage plays a part in the gatekeeping of transfers not considered in keeping with the primary function of the ED (Robertson-Steel 2006).

RACF authors appear to be aware that successful transfer outcomes for resource-related concerns are dependent on interpretation of evaluative language in the narrative (Van Leeuwen 2007). That RACF narratives often included lengthy explanations using narration and argument, supports this assumption. These sometimes outlined and addressed pre-empted rebuttals, at times including reference to authoritative peers to facilitate progression of transfer initiated for built environment and behaviour management reasons (Chapter 5, RACF Transfer 8). Despite being convinced to transport the resident to the ED on moral grounds, scepticism as to whether escalation to ED was appropriate appeared in the e-PCR (Chapter 5, Ambulance Transfer 44), and in the gatekeeping narrative of triage (Chapter 5, EDT Transfer 44). Of note is that the later involvement of the GP, who, in a position of authority, pushed the ED to accept the behaviourally challenging resident by threatening a police cell as an alternative (Chapter 5, GP Letter, Transfer 5).

Transfer to the ED in keeping with normative expectations upholds and validates the different priorities of emergency (Ambulance Service of New South Wales 2009; Department of Health and Ageing 2009; Hasler et al. 2012; State Government of Victoria 2014) and social accommodation services (Australian Law Reform Commission 2008). A shift in the context of transfer that doesn't engage with how the system is perceived to work challenges clinicians to expand the boundaries of the service they expect to provide (Raczaszek-Leonardi, Debska & Sochanowicz 2014).

Acknowledgement that these kinds of transfer require more justification, and are subject to an expected rebuttal, reflects wider societal assumptions about how elderly populations might best be served (Finn et al. 2006; Ingarfield et al. 2009). Further, it also shows that the ED is expected to act as a bridge or temporary solution to serious gaps in the type and level of care available to RACF residents.

Transfer narratives that focus on the built environment, perceived function(s) or working capacity of an organisation increase the risk of information important for continuity of care for residents being omitted. A focus on validating or justifying why transfer is necessary that takes precedence over information focused on the resident is constrained because it is tailored to prioritising different goals; that is, to shifting the burden of care.

Inferring competence

Practices such as transfer are achieved through a complex array of objective-oriented activities in which actors draw on experiential knowledge, rules, and norms in pursuit of their goal (Schatzki 2005a). A clinician is arguably competent when their practice is recognised and supported by peers as correct (Lindberg & Rantatalo 2015). Actions are therefore the main determinants of competence (Ellstrom & Kock 2008). As clinicians work individually and as members of larger teams, individual expertise based on professional practice and socio-cultural know-how are represented differently (Stoof et al. 2002). In this study, competence was inferred from actions that made sense, such as calling for an ambulance, attempting to and/or gaining authority to transfer, conducting assessments, providing treatment, defining the main concern, and allocating a category of urgency (see Chapter 5). Despite this, the context in which competence was referenced was predominately related to the situational context of site to which authoring clinicians identified.

Narratives are equally constitutive of their materiality because they are social norms, rules and organisational politics (Lloyd 2010; Schatzki 2005b). Therefore, experiential knowledge, rules and norms include those from peak regulatory bodies (ACSQHC 2012a; ANMF 2017; Australian Health Practitioner Regulation Agency 2017c), substantiation of clinical competence and clinical conduct (Australian Health Practitioner Regulation Agency 2017b), and actual or potential legal scrutiny (Health Insurance Reciprocal of Canada (HIROC) 2012; Eaton 2014). Documentation is used in either verification or defence (Australian Health Practitioner Regulation Agency 2017a). Or, as HIROC (2012, p. 4) so bluntly states, '[i]n the event of legal action documentation is evidence', which is cognate with the adage familiar to all health graduates during some stage of their training: 'if it's not documented it's not

done/didn't happen'. This implies that cognisance of hierarchical expectations translates to ensuring one's professional integrity as defined within the group.

Therefore, demonstrating competence is a balancing act between justifying practice, including clinical reasons for transfer, treatments, and triage categories, and acting in accordance with policy. Based on the potential for retrospective scrutiny, this is the rational thing for clinicians to do, because it provides the principle means of evaluating clinical 'competence' (Giddens 1984, p.4) and intentionality (Haslett 2013), and of competently performing transfer as a task to be completed.

Health organisations that operate in a fragmented system are siloed (Garling 2008). The organisational groups operating within them are 'system thinkers', meaning that their operations are disconnected from the wider health system because of the contextual limitations that siloing perpetuates (Stoof et al. 2002, pp. 354–355). The context of competence documented by each group is therefore constrained within the context of their operation. System thinking thus imposes a negative influence on the context of competence, because all the 'nose[s are] pointing in a different direction' (Stoof et al. 2002, p. 352). Competence inferences that should be made in the context of collaboratory interprofessional communication focused on the resident are instead reflective of professional expertise and of the culturally accepted norms.

6.5 Chapter summary

The findings discussed in this chapter are different from those of previous studies on RACF-to-ED transfer that have focused on alternative matters (Briggs et al. 2013; Finn et al. 2006; Freed, Gafforini & Carson 2015; Gray et al. 2013; Gruneir, Silver & Rochon 2011; Kruger et al. 2011; Morphet et al. 2015) desirable information (Griffiths et al. 2013; Lewis et al. 2016; Reid et al. 2013; Robinson, C et al. 2012), and on information perceived to be missing (Belfrage et al. 2009; Boockvar, Fridman & Marturano 2005; Hoare 2009; Lewis et al. 2016). Instead of focusing on what content either is or should or should not be, the practice perspective underpinning this study has enabled analysis and discussion of *why* content was.

This study has highlighted that inadequate transfer information is partially attributable to use of documents designed for function(s) other than inter-organisational, inter-professional knowledge sharing. Structured documents, most notably from the ambulance service and triage, capture site-specific information Structural constraints limited the potential inclusion of complex information intended for continuity of care.

Narratives have been demonstrated to be task-dependent constructions perpetuated by layers of internal and external institutionalised practice. A mutual or shared understanding restricts constructions of transfer information across services. While a non-normative transfer enhances the need for reflection and argumentation, highlights the boundaries of services, and produces re-interpretation of information that enables transfer to proceed, both approaches create risk for residents by limiting the inclusion of person-centred information in the narrative.

There is an enormous gap in service provision for elderly residents at risk in RACFs. A lack of built environmental and staffing resources has resulted in transfer to the ED becoming an accepted solution for facilities not designed for, or unable to uphold, an expected level of service. The same pressure to transfer creates additional risks for residents when justification for transfer is prioritised over communicating complex care needs. Documentation structures consistent with emergency services (the e-PCR and the ED triage document) perpetuate the problem, as these organisations have, as yet, resisted modification of transfer documents to incorporate participation in this extension of service.

Anticipation of how a narrative might be interpreted by a future reader, and who that future reader might be, influences its construction. Pre-empting the scrutiny of a governing body or evaluation of performance orients the construction toward legitimising one's particular actions in fulfilment of a professional responsibility, while orienting the narrative in a way that gets the job done facilitates competence amongst one's colleagues. Though a skilled balancing act, each disables the construction of patient-centred information, as the intention is shifted to the underlying organisational demands and to the perception of how actions may be subject to future judgments(s).

In addition, this study identified different conceptions of competence and accountability across transfer. Actions implied by decision to transport, assessment, treatment and receival were prominent features in the narratives, while transitioning *person-centred* information for the resident was not. Given that residents most often have some degree of cognitive impairment and are transferred unaccompanied by persons who know them well, it is surprising that risk-management strategies and safety prompts are only generally, rather than explicitly, included in transfer tools.

Chapter 7: Conclusion

7.1 Introduction

The aim of this study has been to identify practice contributing to the persistence of information gaps in the transfer of aged residents from RACF to ED via ambulance.

This study first acknowledged the persistence of information gaps despite long-term attempts to address them. Unlike previous studies, this one focused on transfer tools and references to practice in the transfer narratives. This study zoomed in and identified agentic actions embedded in tools and constructions of transfer information, and zoomed out to examine systemic mechanisms which recursively affect the overall integrative practice of transfer. The pragmatic perspective informing this study enabled different approaches to quantitative and qualitative inquiry. Results and findings sharing complementarity and difference were drawn together in explanation of why practices positively or negatively affect the construction of transfer information. In this chapter, the findings are discussed in relation to the research questions in fulfilment of the research aim.

This study adds to the body of knowledge on why information gaps in resident transfer from RACF to ED via ambulance have persisted over time by demonstrating that boundary-straining determinants in a system protective of siloed resources, combined with expectant peer/medico-legal scrutiny, and, by association, a consistent focus on legitimising action(s), are, in combination, the facilitators of persistent information gaps. As the overarching concept of legitimation is expressed throughout all the activities of production, consumption, (re)interpretation and translation of information, socio-cultural barriers to exchange can be thought of as entrenched and stable. Therefore, refocusing how legitimacy in the context of transfer is framed could underpin how making improvements in the transfer of information are advanced.

7.2 Key findings

The findings and discussion presented in chapters 4,5 and 6 have answered the research questions, and the answers are briefly summarised here. The discussion brought the results together and drew on clinical as well as wider practices affecting documents and documentation. The following section summarises the key findings in answer to the research questions.

A standardised tool for generating and transferring cross-specialty transfer information is lacking

Transfer tools were not standardised across facilities. Three versions of the YE were found, with different information printed on each side. Absence of uniformity of the YEs was potentially due to a lack of an agreed standard for RACF-to-ED transfer. Collations of RACF hard-copy documents were also reviewed; however, these were not designed as interfacility transfer tools, and they tended to reflect specifically internal documentation requirements. The hard-copy documents were notably varied in format, and inconsistent datasets were available in each transfer case. These factors combined reduced the ease and speed of accessibility and readability of the information contained therein.

An e-PCR was created in all but one ambulance transfer using the VACIS system. The remaining ambulance record of care was in hard-copy, and was reflective of the format of the e-PCR. The paper and electronic fields of both care records were very similar. The EDIS triage document was similarly standardised. EDIS was used to create all triage entries for patients presenting to triage, regardless of their mode of arrival. Consistent and standardised document structure and headings made information readily locatable.

Most written transfer information lacks a structured approach

This study identified that the structure and content of transfer information was not standardised. However, umbrella components of the common mnemonic ‘SBAR’ were found in most transfer narratives. Despite this commonality, exploration of narratives using sub-elements of SBAR showed that the foci of information differed across groups. Within groups, RACF narratives strongly highlighted a lack of resources (built, equipment and/or clinical) to provide desirable treatments, investigations, or an appropriate and safe level of care. In contrast, the focus in the e-PCR was on maintaining clinical and practical assessment and treatment practices. Paramedic narratives resembled service-specific clinical-approach-to-a-patient guidelines, which emphasise a broad context of situational, historical, other medical history, and assessment information. Triage narratives focused on ‘Situation’ elements, almost exclusively in support of the chief complaint and of the ATS category of urgency. This finding suggests that, in addition to the clinical context, social rules, norms and expectations determine how information is prioritised.

Mnemonics were not explicitly formatted into any of the document designs, although the sequential headings ‘Allergies’’, Medications’ and ‘Past history’, which align with the first three letters of the mnemonic AMPLE (see Chapter 2) were identified in the ambulance e-

PCR. Lack of incorporation of a pre-defined mnemonic into document structure increased the opportunity for documenting extraneous information and reduced potential for standardisation.

Narrative information is transformed as it is interpreted and re-interpreted from one organisation to another. This study showed that the interpretation of information is aligned with organisational responsibilities and role, and with the goals of the clinician. Few narratives crossed the boundary of the author's clinical affiliation to make 'Recommendations' or 'Requests'. When 'Recommendations' or 'Requests' were present, the entries tended to originate from the RACF. Potentially because of differing power relationships and expectations of care, RACF authors often cited an authority figure to justify the inclusion. This study found that narratives without citation of an authority figure could later be challenged; social order is a likely positive influence on the likelihood of citing an authoritative peer to achieve a desired outcome. The inference that power imbalances are an impediment to interprofessional collaboration can also be drawn. Therefore, social order has a more significant role in determining the content of information than standardised patient-centred information.

Paramedic e-PCRs contribute significantly in making up for the variability of information in transfer narratives from RACFs. This was attributed to a standardised document format, the practice of data gathering, which conveys information not documented in the painting of a situational clinical picture, and documentation structure not dissimilar from a medical admission entry. The e-PCR's cultural similarity to acute care documentation adds to its value for ED clinicians because of the culturally expected format, which adds to the likelihood of the information being read and to the potential of the e-PCR to carry information between differing organisations.

Continuity is not reflected in documents used for transfer

Each of the structured documents was aligned with the goals of the individual organisations. The items specified on the outside of the primary YE suggest that the list is designed to aid collation of pre-existing information. As pre-existing, site-specific information is constructed within a different context, it does little to enhance continuity. Moreover, as the YE checklists are rarely marked, and as hard-copy datasets received by the ED from RACFs are consistently incomplete, it seems clear that the YE is an undervalued tool. The YEs are received in the ED regardless of the completeness of the checklist. This suggests that the envelope is valued mainly as a container for loose-leaf documents. Like the loose RACF documents, formal structures identified within the e-PCR and ED triage documents reflect

the context of each site. None of the individual organisational documents are linked, nor do they have the capacity for integration. Although the e-PCR is printed and retained by the ED, neither it nor the triage document are designed for information sharing.

Representations of authorship, authority and responsibility vary

This study found that the Registered Nurse on duty in RACFs almost always wrote the transfer entry. Although RNs frequently referred to GPs, the penning of a transfer narrative by a GP independent of an RN was infrequent. In many instances, reference to a GP indicated an unsuccessful attempt at contact, or the leaving of a message. Ambulance e-PCRs were completed by paramedics and intensive care paramedics. ED triage entries were authored by RNs trained in the practice of triage. Reference to a GP was not frequent in either e-PCR or ED triage narratives.

Signing, either electronically or manually, is a requirement for all health records. This study found that progress note entries, e-PCR and ED triage documents were all signed. This finding was unsurprising, as identifiable authorship is a legal requirement to evidence responsibility and accountability, and is additionally an organisational requirement relevant to internal and/or external audit, or financial reimbursement. The formal YE (Type 1) was not signed. As the YE does not form part of the resident's health record, it carries no legal obligation. Lack of a signature field on the YE could reduce any sense of responsibility on the part of the collator to complete the form; justifiably so, because it is not a legally recognised health record.

Data collation in RACFs has geographical challenges

Lack of contact with the resident's nominated GP creates challenges in obtaining health summaries or copies of recent investigations. These are likely to be uploaded to practice servers rather than stored in paper or electronic RACF systems.

Moreover, frequent inability to discuss the resident's physiological situation with the resident's nominated GP suggests that the decision to transfer is often an unsupported one. Some narratives implied successful contact with a GP, but the outcome of the conversation tended toward actioning transfer without face-to-face consultation. Therefore, reference to a GP's absence, through either inability to contact them or lack of on-site consultation, reinforced the actioning of transfers without an accompanying GP letter.

Service gaps create narratives focused on achieving a means to an end

The realities of working in a finitely resourced clinical speciality have a substantial impact on transfer documentation. Transfer narratives are bound to the sites of organisations. Numerous RACF authors documented material resources and/or staffing limitations affecting their ability to perform a clinical role. This was further and pungently exemplified by a GP's letter threatening that police cells would be the only alternative in the event that the ED would not accept the transfer. In contrast, e-PCR and triage authored documentation recursively supported clinical functions. Thus resources (or lack thereof) shape the content and context of documentation. This study found that non-normative references to transfer authored by RACF nurses highlighted the upper limits of safe service provision. The context of documentation in these narratives shifted focus to justifying transfer based on the pressure being placed on finite resources over patient-centred information. Responsibility and accountability for care was transferred, implying that the ED initiated referrals to generate longer-term solutions.

This type of transfer is different from requests for short-term specialist review (i.e. ophthalmology) in that the former include extensive argumentation and warrant, while the latter, not expecting admission or transfer of care, usually contain little material of this kind. However, whether RACFs expected residents to be admitted or not, over half the transfer episodes reviewed in this study were in fact admitted by inpatient teams or to the short-stay ED unit. The Australian Commission on Safety and Quality in Health Care states that 'during handover, transfer of professional responsibility and accountability occur […] independently of whether transfer is on a temporary or permanent basis' (ACSQHC 2012, p. 5). Despite the ACSQHC position, this study found that transfer is less comprehensive when admission to hospital is not considered to be a likely outcome. All transfers should document information comprehensive enough to safely transfer responsibility and accountability on a temporary or permanent basis for every resident transferred.

Experience exerts a multivocal influence on transfer documentation

Common language, involving anatomical abbreviations and symbols appeared to be equally accepted across organisations, and this facilitated concise documentation. However, extremes of brevity limited the inclusion of comprehensive information, placing the resident at increased risk of nosocomial harm. Extensive narration and argument strategies legitimise transfer when it is outside the expected boundaries of ED but potentially a more permanent transfer. Such strategies include referencing figures of authority culturally significant in health service hierarchies.

Demonstrating professional competence may influence the way information written for transfer is documented, because pre-empting a future reader's interpretation of work-task performance and fulfilment of professional responsibility creates task-oriented documentation practices. Signposting practices frequently refer to information intended to avert risk. Signposting strategies consider a future reader's capacity to avert an adverse outcome. The inclusion and onward sharing of risk-avoidance information is dependent on an author's experiential knowledge and on the value they consequently ascribe to the risk. Therefore, cross-service experience is probably an aid to interpreting information documented in an abbreviated format, to predicting risk, and to understanding the obligations of other health services.

7.3 Conclusion

This study demonstrated differing references to practice in transfer documentation. Understanding what underpins a practice is essential to understanding why information gaps have endured in spite of numerous efforts to fill them. This study showed that gaps continue to plague information transfer from RACF to ED, because existing documents and documentation practices are inadequate for transferring comprehensive complex care information. Zooming in and out revealed overlapping recursive relationships between internal and external legal and social expectations, implying that these competing relationships are one reason why attempts to change documentation practices with new and re-structured documents have not resulted in widespread sustainability or ongoing success.

An encouraging finding was this study's glimpse of a positive cultural shift through the application of SBAR that could lead the way for change and reduce information gaps. This exciting phenomenon highlighted the previously unsubstantiated value of the paramedic e-PCR in RACF-to-ED transfer, and the capacity of the e-PCR narrative to exert dual agency. These findings, combined, have potential for clinicians, policy-makers and information system designers. More importantly, these findings have the potential to improve transitional care for RACF residents who lack a collective voice in the field of information transfer.

It is possible that development of a single, universal, transfer-specific document could be designed with a central focus on the resident that could also meet the needs of all three organisational groups. This study suggests there is merit in creating cross-organisation partnerships for further discussion on how to move forward, and to using a similar avenue to educate clinicians on how SBAR might be used to negotiate and improve inter-organisational, inter-speciality information exchange. Based on the findings above, the researcher makes the following recommendations:

Recommendation 1: Inadequately resourced RACFs increase the likelihood of residents being transferred to the ED, resulting in increased risk of adverse health outcomes at the same time as exerting a negative effect on the work-flow of the ED. It is recommended that access to community health service options, and on-site resources in RACFs, be increased.

Recommendation 2: Information transfer practices across RACF, ambulance and ED triage are currently inadequate. However, the development of a new document or tool alone is unlikely to sufficiently address current inadequacies. RACF, ambulance and ED clinicians should work collaboratively to develop an integrated mode of information sharing. Further, these organisations should seek out ways to improve and establish sustainable working relationships.

Recommendation 3: Ambulance and triage clinicians are reluctant or unable to include resource-related transfer in their acute, physiologically-oriented documentation systems. To address the inappropriate transformation of environment resource-related transfers, a collaborative approach exploring potential for a new, inclusive transfer document should be initiated.

Recommendation 4: A uniformly accepted, patient-centred standard for nurse-initiated RACF-to-ED information transfer does not exist. This omission should be addressed with some urgency, in conjunction with Recommendation 2, to enable a base from which new, collaborative standards of transfer can be constructed.

7.4 Strengths and limitations of the research approach

The strength of these findings is in the novel application of Practice Theory to the study of transfer documents. Practice Theory, as a relatively new foray into qualitative clinical information sharing and handover research, facilitated theorisation of why information gaps have persisted over time. Using a mixed methods approach enabled by a pragmatic ontology provided valuable insight into the different mechanisms of creating documents and documentation that enables particular types of information while constraining others. This novel approach has offered fresh answers to the long-standing problem of poor information transfer for older Australians. Despite the strongly theoretical lens, the findings have applicability for everyday clinicians, as well as for future policy-makers.

Furthermore, this study specifically included ambulance documents and documentation, which have been largely unexplored in previous RACF-to-ED studies. The inclusion of e-

PCR documents enabled transfers to be followed across services, providing valuable insights into how information is interpreted, (re)constructed and transformed.

This study has already contributed to improving information transfer. Discussion of the study's findings with local organisation Primary Health Tasmania, the supplier of YEs to Tasmanian RACFs, contributed to the redesign of information printed on the envelopes. The new design provides a larger area for documenting information, is structured using SBAR, and incorporates a signature field. The new YE (Appendix 2, Style 4) is currently in the process of printing and roll-out.

The multiple mechanisms and practices highlighted in this study enhance the credibility of the findings. Previous studies in this area have tended to focus on specific organisations, often identifying desirable information, information gaps at the receiver's end, or the appropriateness of RACF/geriatric presentations to ED. This study cast a wider exploratory net and bridged interdisciplinary services in recognition that transfer is an integrative practice. This inclusive approach has delivered practical and actionable insights relevant to clinicians and policy-makers that can collectively reduce gaps in information transfer.

Limitations of the research approach

As with all research, this study is not without limitations and weaknesses. This study was undertaken in the geographically isolated state of Tasmania; the findings are unlikely to be automatically transferrable to other settings. However, as global research cites ongoing issues with gaps in information for residents transferred from aged care facilities to emergency departments, the study's design and theoretical contributions provide insights and directions for improvement in inter-facility information exchange globally. Studies such as this make contributions based not on representativeness but on the basis of theory.

Like many previous studies, this one did not observe clinicians in practice. Despite making the different vocabularies and intentions of documentation practices visible, this study cannot comment on verbal or bodily patterns of inter-clinician interaction.

7.5 Directions for further research

This study has shown that applying Practice Theory to the study of information sharing and handover yields valuable information, useful for revising current, and developing new, information transfer practices between RACF, ambulance services, and ED triage. The inclusion of PT in this approach is relevant, and potentially advantageous, to all stages of information transfer within and across organisations. This study focused on the most

commonly used and generally accepted transfer forms. However, other transfer forms also exist, particularly across RACF services, and in other states. Future research could apply a similarly pragmatic methodology to other institutions and use the findings in conjunction with those of this study to improve information sharing.

Further, this study has been undertaken at a time when access to electronically-integrated health information platforms, with the intention of broadly inclusive clinical accessibility, are becoming a reality in Australia. This research found that documents designed for specific purposes do little to incorporate the complexities of transfer, and that clinicians frequently document in terms of findings, tasks done, and tasks in progress. To increase the communication of complex information, and thereby the useability that electronic access is intended to promote, it will be necessary to explore how the documentation practices of organisations and clinicians can also become more patient-centred.

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Appendices

Appendix 1: Australasian Triage Scale

Australasian Triage Scale (ATS): Category and Timeframes

ATS Category	Treatment acuity (maximum waiting time)
1	Immediate
2	10 minutes
3	30 minutes
4	60 minutes
5	120 minutes

Emergency Triage Education Kit: Triage Quick Reference Guide

https://www.health.gov.au/internet/main/publishing.nsf/Content/387970CE723E2BD8CA257BF0001DC49F/$File/Triage per cent20Quick per cent20Reference per cent20Guide.pdf

Australian Government: Department of Health and Ageing

Appendix 2a: Yellow Envelope Type 1 (official)

TRANSFER TO HOSPITAL CHECKLIST

STAFF TO C[redacted]FER

Details or Cli[redacted]

Name: ...

Address: .....

Suburb: **Code:**

DOB: .....

SERVICE PROVIDER DETAILS

Aged Care Facility .....

Phone ..... Fax .....

DATE OF TRANSFER TO HOSPITAL ...../...../.....

☐ Hospital notified by telephone of pending transfer (Emergency Department or Admitting Officer)

RESIDENT'S/CLIENT'S GP

Dr ..... Contact Phone .....

STAFF MEMBER TO BE CONTACTED ABOUT THIS RESIDENT/CLIENT AT AGED CARE FACILITY (ACF)

Name ..... Position ..... Phone ..... Email .....

THIS RESIDENT/CLIENT RECEIVES (Please tick)

High Care	☐	EACH	☐	DVA	☐
Low Care	☐	EACHD	☐	Other	
Respite - HIGH	☐	CACP	☐		
- LOW	☐	Independent Living Unit	☐		

ENCLOSURES (checklist)

- ☐ **LETTER OF TRANSFER (includes reason for transfer)**
- ☐ **MEDICATION CHART and/or WEBSTER PACK FOR COMMUNITY CLIENTS**
- ☐ **ALLERGIES LISTED**
- ☐ **MEDICATIONS SENT *(PRIVATE HOSPITAL ONLY)***
- ☐ **TRANSFER FORM or PERSONAL PLAN SUMMARY or most recent CMA**
- ☐ **GOALS OF CARE PLAN**
- ☐ **CONTACT AND PERSONAL INFORMATION SHEET**
- ☐ **LETTER FROM GP / GP INFORMED OF TRANSFER**
- ☐ **ADVANCE CARE PLAN / ADVANCED CARE DIRECTIVE**
- ☐ **PERSON RESPONSIBLE (as per patient's instructions) NOTIFIED OF TRANSFER**

Who was notified .....

When (date/time) ..... Phone .....

Message .....

RELEVANT ALERTS OR OTHER MATTERS

☐ Allergies	☐ O_2 .....
☐ Falls Risk	☐ Alarms (eg. bed/wandering) .....
☐ Cognitive Status	☐ Return Transport Advice .....

Other .....

.....

Appendix 2b: Yellow Envelope Type 2

Checklist for Transfer-to-Hospital Clinical Handover

Tick boxes to indicate

☐ Hospital notified by telephone

Information included in envelope >

☐ Advance care plan / End-of-life wishes

☐ Transfer Form *(include as a minimum)*

- ☑ Resident details: Name, DOB, religion, language spoken & need for interpreter
- ☑ Contact details of Aged Care Home including telephone number (in- & after-hours) & address
- ☑ Pension number
- ☑ Health insurance status: (i.e. Medicare only / DVA / privately insured) & include details
- ☐ Name of usual GP & contact details
- ☐ Name of usual Pharmacist & contact details
- ☐ Name of next-of-kin &/or Medical Enduring Power of Attorney or equivalent & contact details
- ☑ Next-of-kin notified of transfer — Left message
- ☑ Reason for transfer including events leading up to transfer
- ☐ Relevant medical history
- ☐ Any known allergies
- ☑ Pre-morbid / usual condition & functioning: cognition, mobility, continence, behaviours, diet

☐ Letter from GP, locum or Aged Care Home detailing reason for transfer

☑ Copy of most recent Comprehensive Medical Assessment (CMA)

☐ Copy of results of recent investigations (blood tests / x-ray / other pathology)

☑ Copy of current drug chart / list of current medications & time of last administration

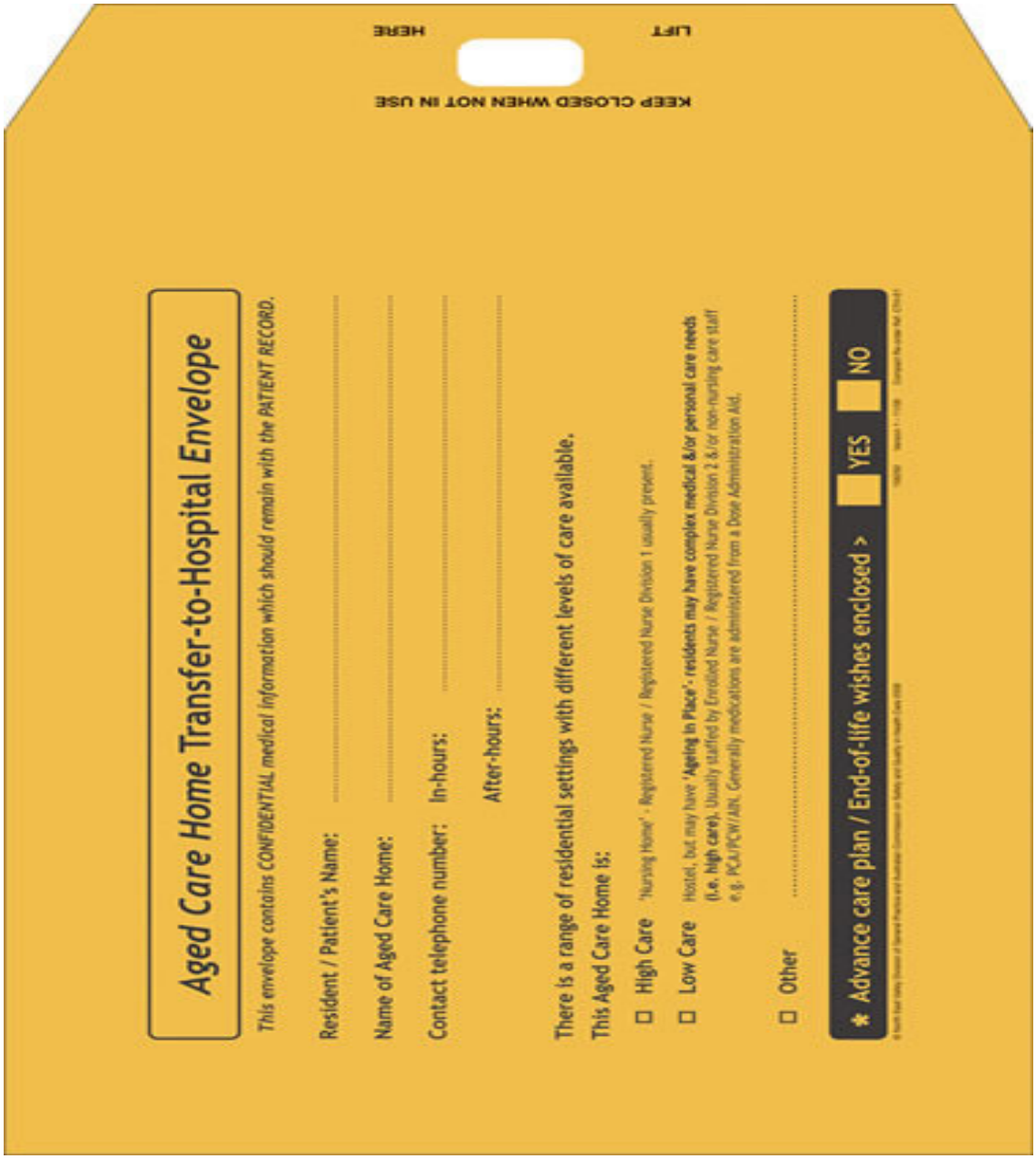
☑ Copy of current observation, blood sugar level & bowel charts (if applicable)

KEEP CLOSED WHEN NOT IN USE

Tudor Tac www.tudor.net.au

LIFT HERE

Appendix 2c: Yellow Envelope Type 3



Appendix 2d: Yellow Envelope Type 4

TRANSFER TO HOSPITAL CHECKLIST

phn | primary health TASMANIA

RESIDENTIAL AGED CARE FACILITY STAFF TO COMPLETE THIS SECTION

DETAILS OR CLIENT STICKER

Name
Address
Suburb Code
DOB / /

SERVICE PROVIDER DETAILS

Aged care facility
Phone
Fax

DATE OF TRANSFER TO HOSPITAL / /

☐ Hospital notified by telephone of pending transfer (Emergency Department or Admitting Officer)

CARE RECIPIENT HAS A MY HEALTH RECORD (EHEALTH RECORD) ☐ Yes ☐ No

GP name Practice
Phone Fax/Email
Alerts ☐ Allergies ☐ Behaviour ☐ Cognition ☐ Communication
☐ Medical ☐ Infection ☐ Implanted device ☐ Other

HANDOVER

Situation
Briefly describe the situation

Background
Briefly state the relevant history (e.g. GP visits, medications)
What has happened to get to this point?

Assessment
What do you think is going on?
What have you done so far?

Recommendations
What do you want to happen next?

ENCLOSURES (checklist - please ✔ or ✘ as appropriate)

☐ Letter of transfer (includes reason for transfer)
☐ Medication chart and/or Webster pack for community clients
☐ Transfer form or personal plan summary or most recent Comprehensive Medical Assessment (CMA)
☐ Letter from GP/GP informed of transfer
☐ Advance Care Plan/Advance Care Directive/Goals of Care Plan
☐ Person (as per patient's instructions) notified of transfer
☐ Printed electronic hospital transfer form

Who was notified of transfer
When (date/time) / / Phone
Message

Signed Date / /
Print name Designation

AGED CARE SERVICE RECIPIENT

Appendix 3: Data reduction

Table A3.1: Developing the basic category: Forwarding the reasons for transfer

Codings	Pattern codes	Basic Categories
Describing: • Lead up to transfer event • Current condition Outlining: • Prior clinical management • Medical history Stating: • Clinical results • Vital signs • The problem or event • Assessment findings • Outcome of treatment	• Detailing evidence of the current situation • Detailing evidence of the immediate background • Detailing the current assessment	Forwarding the immediate reasons for transfer

Table A3.2: Developing the basic category: Legitimacy

Codings	Pattern codes	Basic Categories
Contacting: • Residents family • Residents GP • GP alternative • Other specialist (i.e. aged care nurse practitioner) Stating: • Permission to transfer Outlining • Clinical concerns • Physical/ resource concerns	Hierarchical practices Due process Justification Legitimacy	Legitimacy

Table A3.3 Developing the basic category: Risk Management

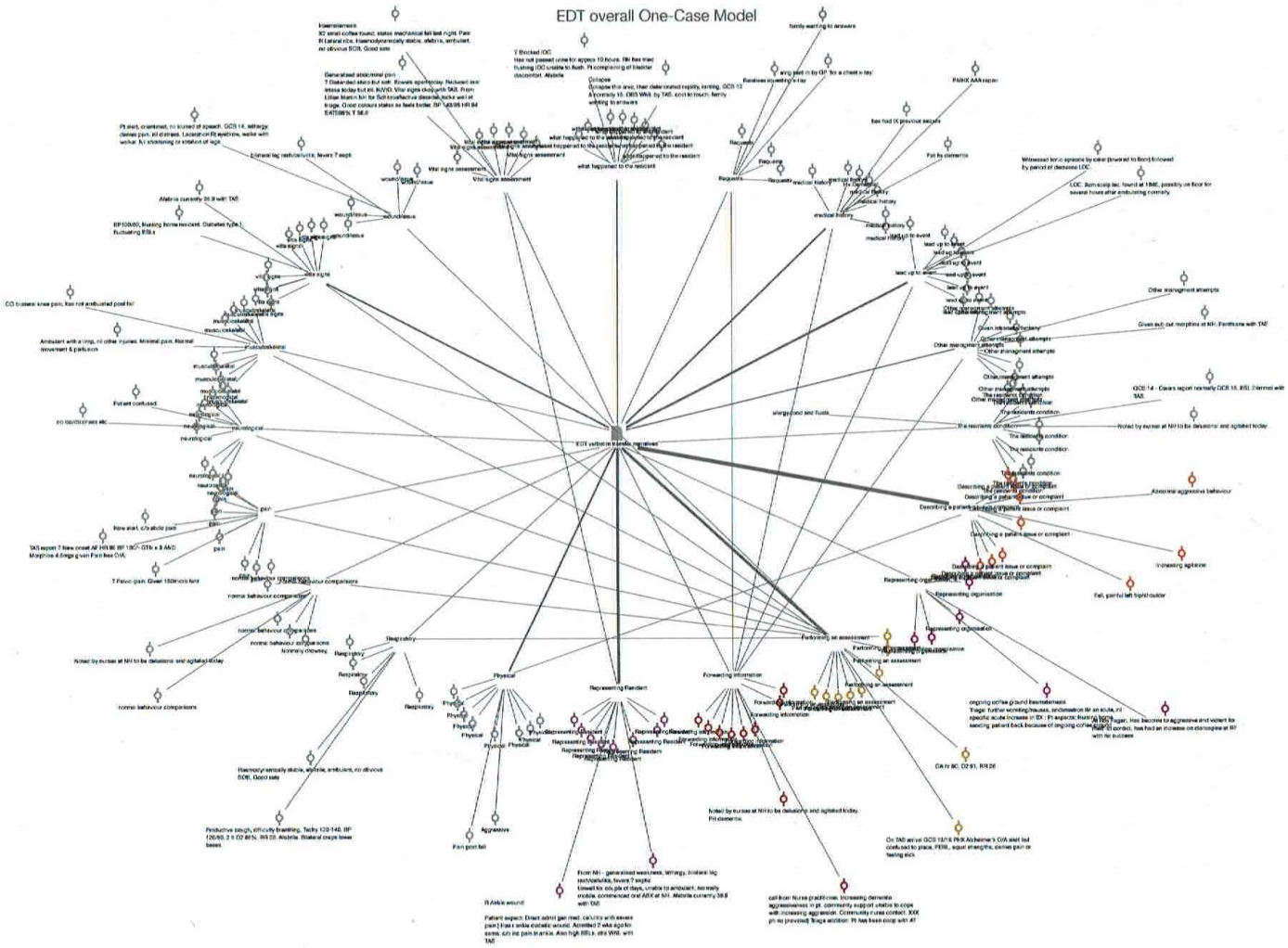
Codings	Pattern codes	Basic Categories
Seeking: • End of life directive • Treatment • Advice Dictating • Conditions of return to facility	Making/requesting a plan of care Highlighting boundaries of service	Risk management

Table A3.4: Developing the basic categories: Duty of care & role Obligations

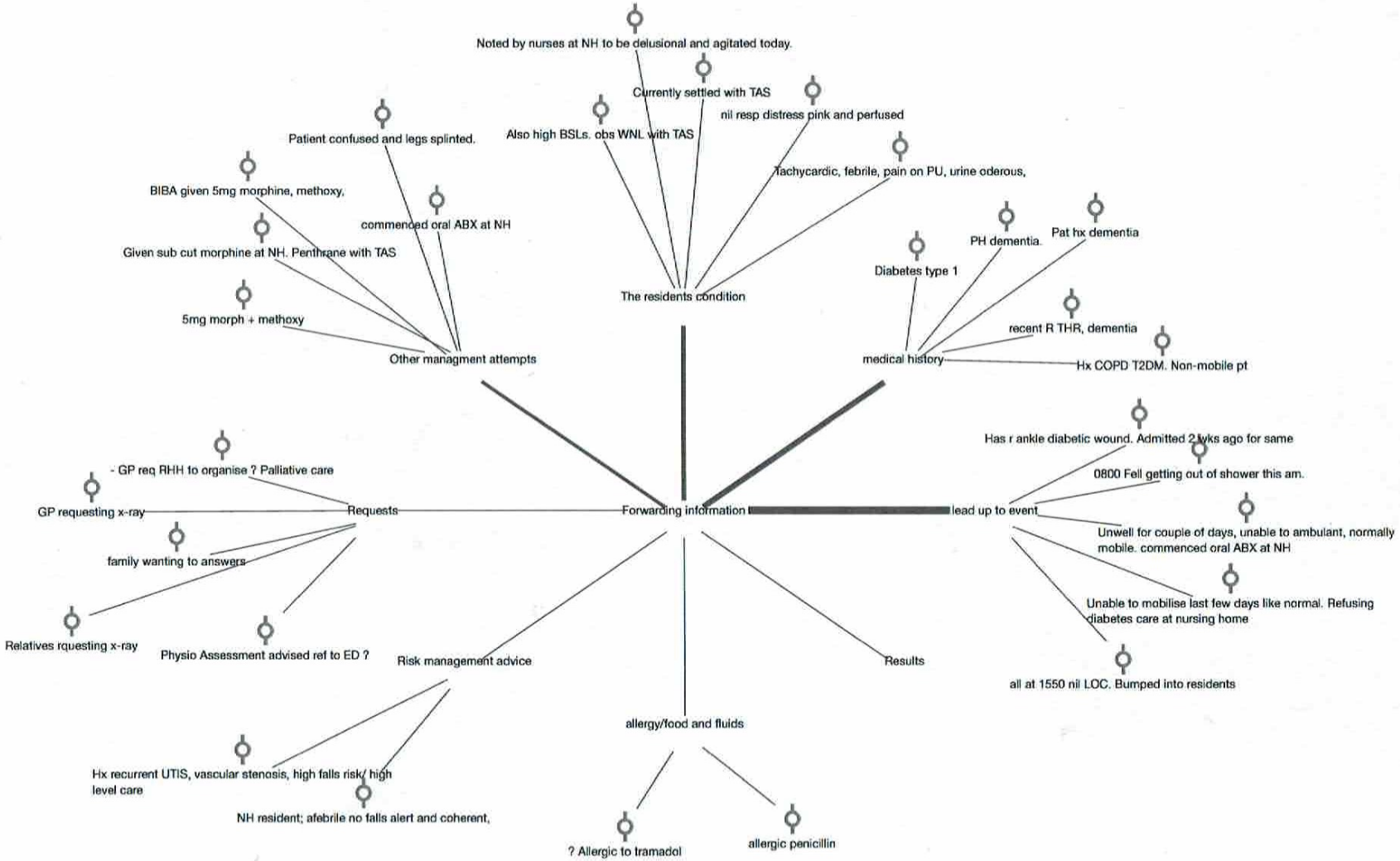
Codings	Pattern codes	Basic Categories
Allocating: • A differential diagnosis • A triage category Performing: • Assessments (Vital signs, neurological, pain, neurovascular etc. Contacting: • A higher authority (email, phone, fax)	Undertaking physical tasks Fulfilling organisational role requirements	Duty of care Role obligatons

Appendix 4: Case modelling

EDT Code-Sub-code segment model 'Forwarding Information'



ED triage Forwarding information Code-Subcode-Segments Model



Appendix 5: VACIS test case sheet (fictitious patient and data)

- electronic Patient Care Report

VACIS **HOSPITAL COPY**

Case #

Patient Name

Case Date **24 Aug 2017, Thursday**

Address BISHOP DAVIES COURT NURSING HOME
27 REDWOOD Road
KINGSTON TAS, 7050 Australia

Patient 1 of 1 Treated by crew
Final Assessment **(P)pr bleeding**
(S)abrasion / graze

Gender Female **DOB** **Age**

Case / Scene
Case Given As FALL
Location Upon Dispatch Responding from Branch
Location Type Nursing Home/ Supported Accommodation
Case Scene BISHOP DAVIES COURT NURSING HOME, 27 REDWOOD Road, KINGSTON TAS, 7050 Australia

Past History
Pre-Exist **Nil Known**

Meds **Nil Current Medications**

Allergies **No Known Allergies**

98

31/01/1914
103 YEARS

Risk Factors **Nil Known**

Case History
Case Nature **fall** same level

Case Description on Pt called AT after having a fall in nursing home this AM.

On Examination
Primary Survey **no immediate life threat**

Secondary Survey **abrasion** **graze**

Initial Assessment **abrasion** **graze** **bruising** **haematoma** / / /;

Vital Signs Survey

	Time	**10:52**
	VSS Position	Sitting
CVS		
	Pulse	110 (Regular)
	Site	Radial
	Quality	Normal
	BP	80/PALP
	Skin	
	Temp	Normal
	Colour	Normal
	Moisture	Normal
RESP		
	RR	10
CNS		
	Eyes	4 - Spontaneous
	Verbal	5 - Orientated
	Motor	6 - Obeys Command
	GCS Score	15
	Pupils (L)	
	Size	Normal
	Reactivity	Reactive
	Pupils (R)	
	Size	Normal
	Reactivity	Reactive
BSL	**(mmol/l)**	15.0
	Pain	6 of 10

Case # **98**

Case Date **24 Aug 2017, Thursday**

Patient Name

Management & Reassessment

10:50 **haemorrhage control**

using pad and bandage [Attendant: 609330]

Result
Final Assessment **(P)** **pr bleeding**
(S) **abrasion** **graze**

Patient Outcome / Improved (Observed)

electronic Patient Care Report

VACIS **HOSPITAL COPY** **Page 3 of 3**

Case **98**

Case Date **24 Aug 2017, Thursday**

Ambulance Crew
Team #/Name 5/KINGSTON
Fleet Unit #/Type 744/Ambulance
Skill Set Paramedic 24-Aug-2017 @07:29

Destination
Not Transported Reason Tx Not Required

Times

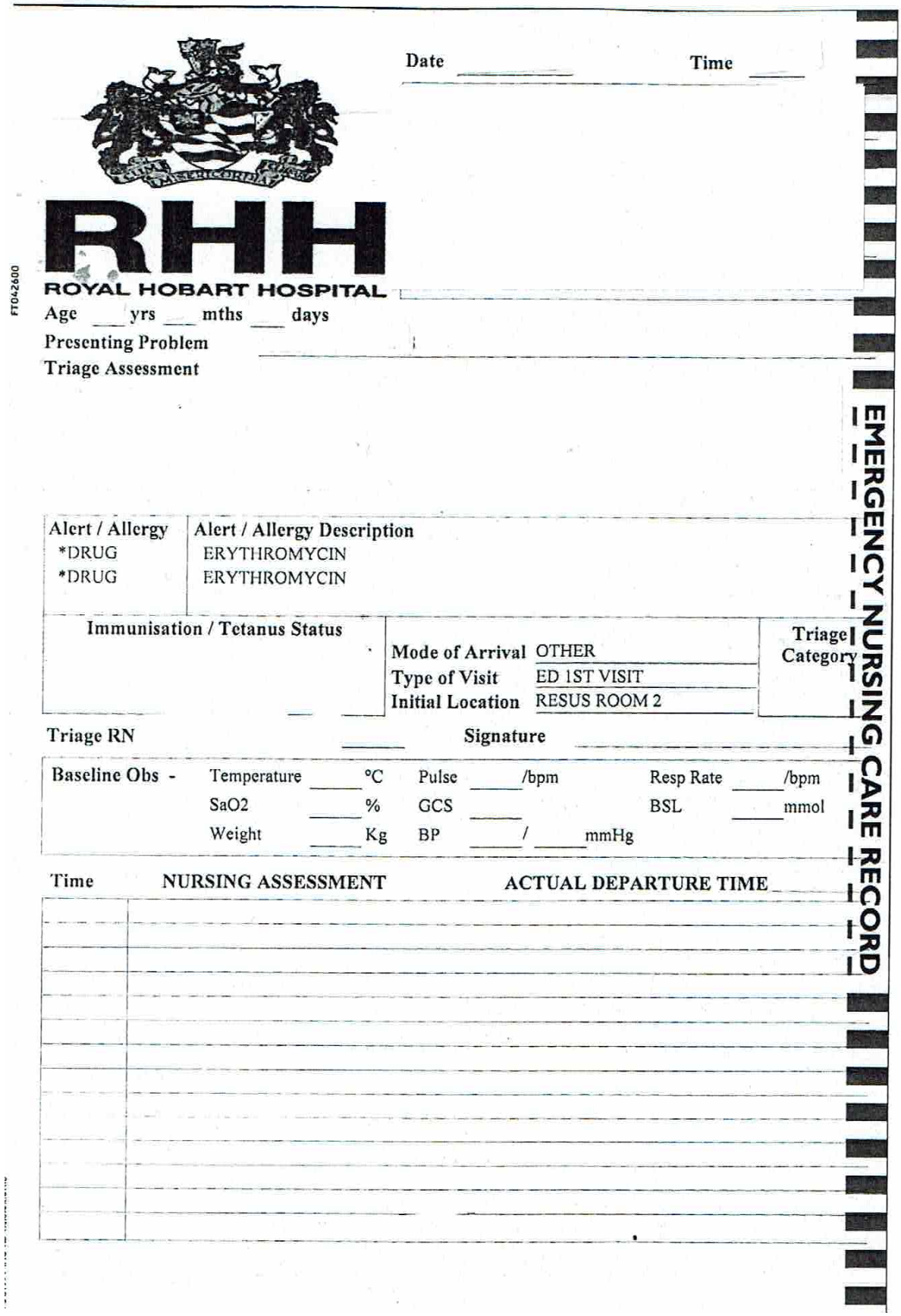
Call Received	Dispatched	En Route	@ Scene	@ Patient	Loaded	@ Destination	Triage	Off Stretcher	Clear
10:00	10:30	10:32	10:45	10:48					11:30 #

Patient Name

Notify

Billing Details
Billing Type Tasmanian Resident
Odometer Start 897 Ambulance Tasmania, P.O. Box 125, Hobart, 7001

Appendix 6: EDIS triage document



RHH
ROYAL HOBART HOSPITAL

FT042600

Date _____ Time _____

Age ___ yrs ___ mths ___ days

Presenting Problem

Triage Assessment

EMERGENCY NURSING CARE RECORD

Alert / Allergy	Alert / Allergy Description
*DRUG	ERYTHROMYCIN
*DRUG	ERYTHROMYCIN

Immunisation / Tetanus Status

Mode of Arrival OTHER
Type of Visit ED 1ST VISIT
Initial Location RESUS ROOM 2

Triage Category

Triage RN _____ Signature _____

Baseline Obs - Temperature ____ °C Pulse ____ /bpm Resp Rate ____ /bpm
SaO2 ____ % GCS ____ BSL ____ mmol
Weight ____ Kg BP ____ / ____ mmHg

Time	NURSING ASSESSMENT	ACTUAL DEPARTURE TIME

Appendix 7: Published article

The article ‘Continuity matters: Examining the ‘information gap’ in transfer from Residential Aged Care, ambulance to emergency triage in southern Tasmania’ is attached overleaf.

Citation: Campbell, B., Sterling, C., Cummings, E., 2017. Continuity matters: Examining the ‘information gap’ in transfer from Residential Aged Care, ambulance to emergency triage in southern Tasmania, International emergency nursing, 32, 9-14